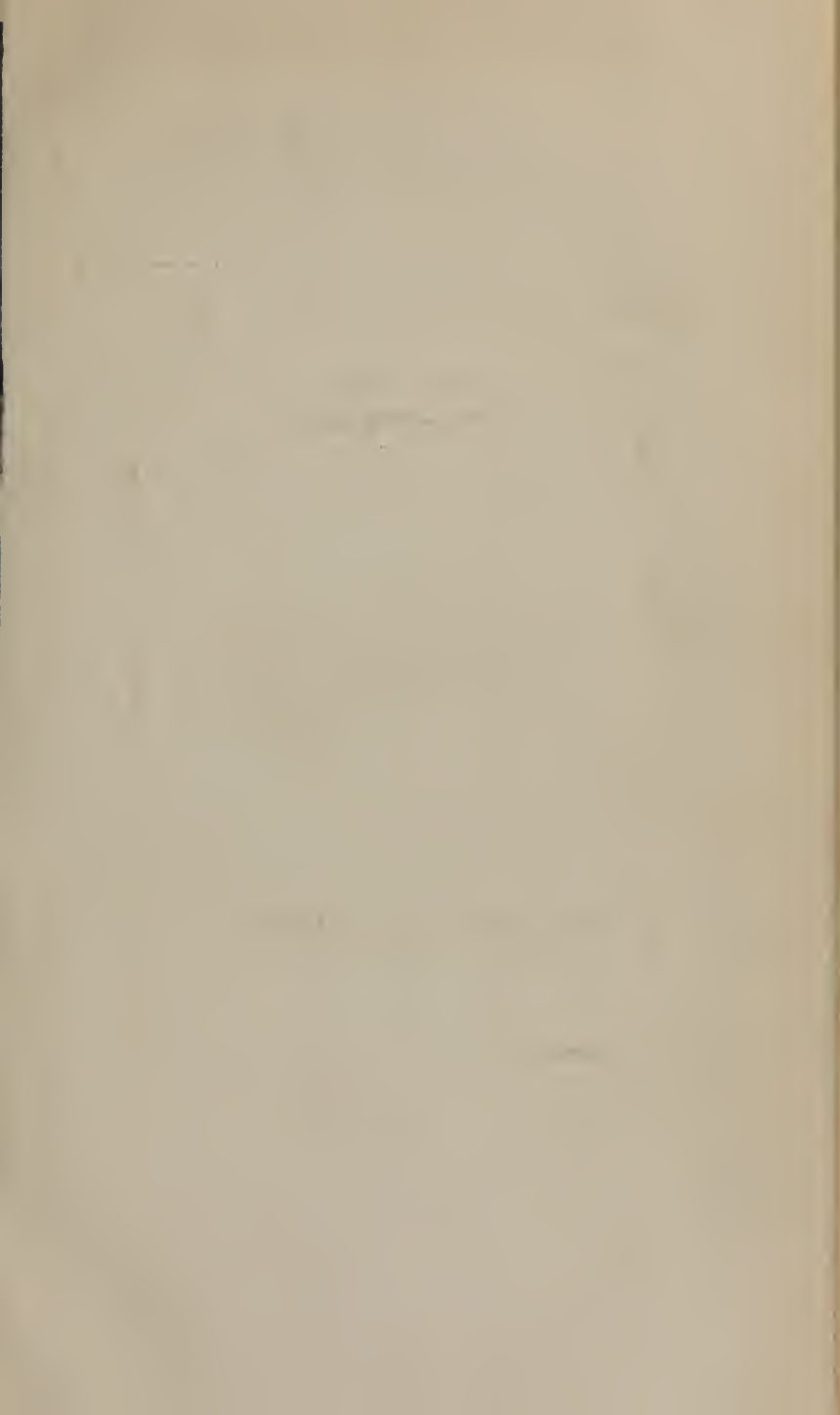


ARMY MEDICAL LIBRARY

FOUNDED 1836



WASHINGTON, D.C.





See Page 396 Vol II

THE
1
S U R G I C A L
AND
PHYSIOLOGICAL WORKS

OF
JOHN ABERNETHY, F.R.S.

HONORARY MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND;
OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH;
CORRESPONDING MEMBER OF THE SOCIETY OF THE FACULTY OF
MEDICINE IN PARIS.
AND OF THE MEDICAL SOCIETIES OF ABERDEEN, PARIS, BOURDEAUX,
PHILADELPHIA, &c.;
SURGEON TO ST. BARTHOLOMEW'S AND CHRIST'S HOSPITALS.

FROM THE SIXTH LONDON EDITION.

EMBRACING
REFLECTIONS
ON
GALL AND SPURZHEIM'S SYSTEM OF
PHYSIOGNOMY AND PHRENOLOGY.

Complete in two Volumes.

VOL. I.

112528.

LONDON :

PRINTED BY LONGMAN, HURST, REES, ORME & BROWN.

HARTFORD :

REPRINTED BY OLIVER D. COOKE & CO.

1325.

WO
A1465C
1825
v.1

Film 8030, Item 1

0021

CONTENTS.

VOL. I.

	PAGE.
On the Constitutional Origin and Treatment of Local Diseases	9
On Nervous and Muscular Disorders	61
On the Effects of Disorders of the Digestive Organs attending injuries of the Head	74
On undefined and undenominated local Diseases arising from Disorders of the Constitution	82
On more defined Diseases, as Carbuncle and Scrofula, arising from Disorder of the Constitution	97
On Diseases of various Glands, arising from Disorders of the Constitution	107
On Disorders of Parts which have a Continuity of Surface with the Alimentary Canal	121
On the Causation of other Diseases by those of the Digestive Organs	132
On Aneurisms	147
On the Origin, Symptoms, and Treatment of Diseases produced by the Absorption of Morbific Animal Matter, and which in appearance frequently resemble Syphilis	183
On Pseudo-Syphilitic Diseases becoming well spontaneously	197
On the Constitutional Origin of Pseudo-Syphilitic Diseases	224
On the Effects of Mercury in Pseudo-Syphilitic Diseases	231
On Burrowing Sores	246
On Sloughing Sores	252
On Sores which become indurated in their circumference	257
On the Treatment of Pseudo-Syphilitic Diseases	265
On Diseases of the Urethra ; particularly that part which is surrounded by the Prostate Gland	275
On the Constitutional Origin and Treatment of Diseases of the Urethra	291
On some Effects of Diseases of the Urethra	296
On Injuries of the Head	311
On Injuries of the Head, attended with Extravasation of Blood upon the Dura Mater	330
Of Cases of Fungus, or Hernia Cerebri	338
On the Concussion of the Brain	347
On Inflammation of the Pia Mater	362
On Diseases of the Bone and Dura Mater	367
On the Ill Consequences sometimes succeeding to Venesection	383

On Inflammation of the Integuments, and Subjacent Cellular Substances	384
On Inflammation of the Absorbing Vessels	384
On Inflammation of the Fascia of the Fore-Arm	392
On the Ill Consequences succeeding to a Wounded Nerve	395
On Emphysema	405

CONTENTS OF VOL. II.

On the Operation of Puncturing the Urinary Bladder	5
On the Tic Douloureux	17
On the Removal of Loose Substances from the Knee-Joint	26
On the Treatment of One Species of the Nævi Materni	34
On Hæmorrhoidal Diseases	40
On Fistule in the Perinæum	50
On Tumours	63
On Common Vascular, or Organized Sarcoma	74
On Adipose Sarcoma	79
On Pancreatic Sarcoma	83
On Cystic Sarcoma	89
On Mammary Sarcoma	91
On Tuberculated Sarcoma	94
On Pulpy or Medullary Sarcoma	97
On Carcinomatous Sarcoma	104
On Encysted Tumours	127
On Chronic and Lumbar Abscesses	143
Cases of Lumbar Abscesses dispersed without being opened	161
Cases of Lumbar Abscesses that have been dispersed after their contents have been discharged	163
Cases of Lumbar Abscesses becoming permanently open	171
Hunterian Oration, delivered before the Royal College of Surgeons in London	3
Reflections on Gall and Spurzheim's System of Physiognomy and Phrenology	41

PHYSIOLOGICAL LECTURES, delivered before the Royal College of Surgeons in London.

INTRODUCTORY LECTURES, on the Theory of Life and Diseases.

PHYSIOLOGICAL LECTURES, exhibiting a General View of Mr. Hunter's Physiology, and of his Researches in Comparative Anatomy.

CONSTITUTIONAL ORIGIN AND TREATMENT
OF
LOCAL DISEASES;
ON
ANEURISMS,
AND
ON DISEASES OF THE URETHRA.

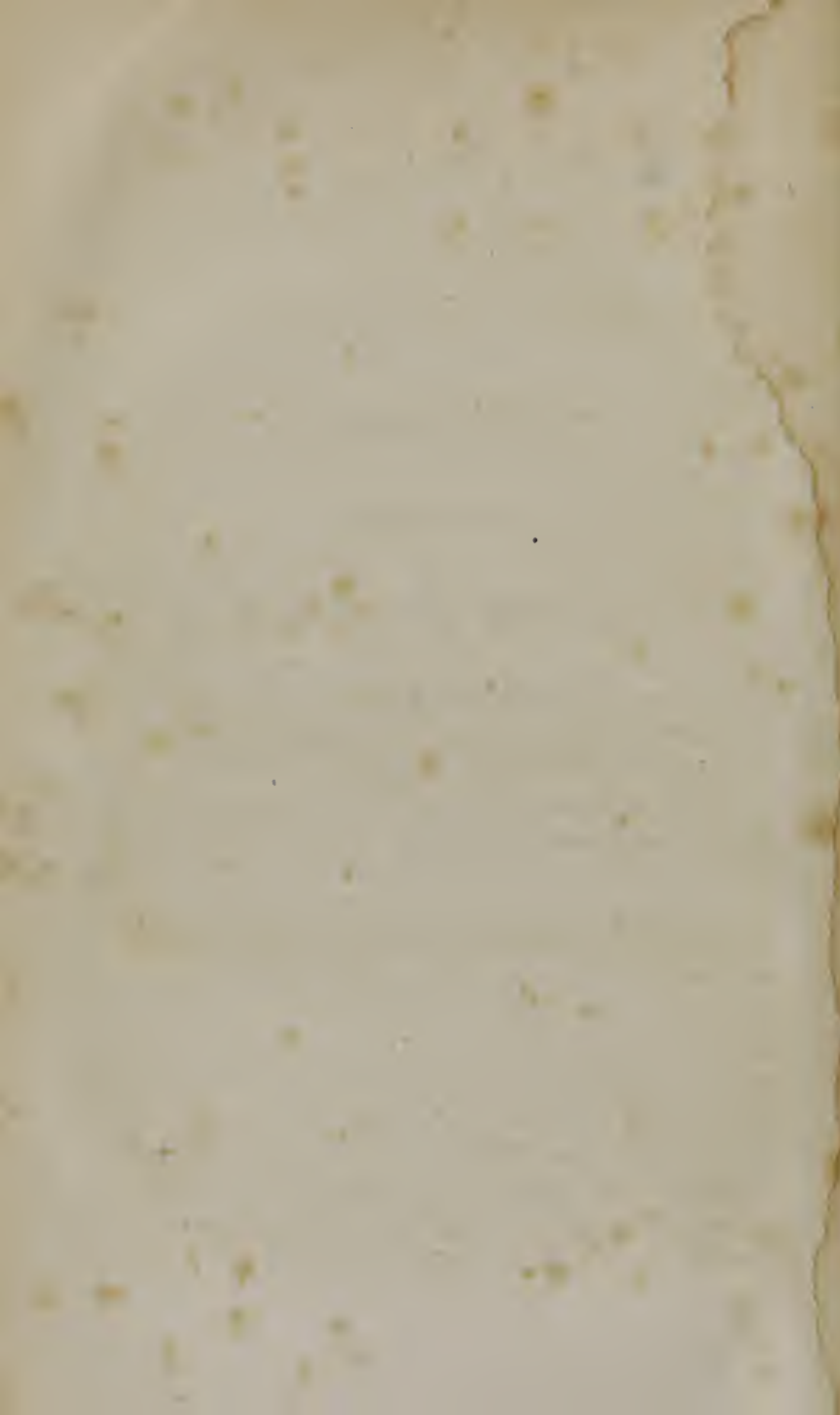
BY JOHN ABERNETHY, F.R.S.

HONORARY MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND;
OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH;
CORRESPONDING MEMBER OF THE SOCIETY OF THE FACULTY OF
MEDICINE IN PARIS;
AND OF THE MEDICAL SOCIETIES OF ABERDEEN, PARIS, BOURDEAUX,
PHILADELPHIA, &c.;
SURGEON TO ST. BARTHOLOMEW'S AND CHRIST'S HOSPITALS.

*"Chirurgo necessariam esse cognitionem Physices, Chimiæ, Logices, omnis
" (fere) ambitus Medicinæ; neque solo manus exercitio veros chirurgos
" fieri."*

HERM. BOERHAAV. Method.

Stud. Med. locupletata ab Alb. von Haller.



P R E F A C E .

THE best mode of obtaining and extending medical and surgical knowledge is, in my opinion, to pay that strict attention to diseases, which qualifies us to note even the slightest shades of difference that distinguish them from each other. Such discrimination leads us to form some regular arrangement of them, which, even if it be not correct, may ultimately enable us to discover their natural series and order. This method I have pursued from the beginning of my professional studies. Whenever the opinions on subjects of importance, which an attention to cases had impressed upon my mind, differed from those which seemed to prevail among other practitioners, I published the facts, and the inferences which I drew from them, because I thought that the former at least deserved attention, and that the latter would either be confirmed or confuted by the result of general experience.

It is more, however, on account of the cases, than of the conclusions which they suggested, that I am desirous of republishing my surgical writings. Various advantages result even from the publication of opinions ; for though we are very liable to error in forming them, yet their promulgation, by exciting investigation, and pointing out the deficiencies of

our information, cannot be otherwise than useful in the promotion of science.

The publication of the opinions which naturally arise in the mind of the surgeon, from the cases submitted to his observation, possesses the farther utility of rendering a prolix detail of circumstances unnecessary. It would be almost impossible to relate every minute occurrence, that tended to impress certain conclusions on the mind of the observer ; or to relate every trifling particular of treatment, by which the surgeon endeavoured to accomplish his object. Such a dull and tedious narrative, which would weary and disgust the reader, may indeed be well spared ; because the practitioner may, and must, repeatedly peruse the case at large in the book of nature. The writer merely points out those signs by which any disease may be discriminated from others, and identified as one of the particular class to which he is desirous of exciting the public attention.

With regard to the cases, which I consider as the valuable part of the book, I may observe, that it is not to be expected that the records of them will make so strong an impression on the minds of the readers, as the observance of them has done on that of the writer ; but when the same occurrences are met with in practice, then will the impression become more vivid, and knowledge arise, as it usually does, from personal experience. If the facts contained in these volumes occurred so rarely, that others could not be expected to meet with them, their relation would be of little value. They may, however, not improperly be compared

to certain species of plants, by no means uncommon, which are liable to be confounded with others by an inattentive observer; but when their discriminating characters are once pointed out, they may be so readily distinguished, collected, and examined, as to render a more minute description of them unnecessary. If diseases could, like other objects which we mean to delineate, be placed in various points of view, and illuminated at pleasure, so as to show distinctly their different parts, one accurate representation would suffice; but we see them obscurely, and as knowledge increases, it serves, like light shining from different places, to illuminate the various parts of the objects of our examination.

For, as I have expressed it in the first edition of these writings, "in proportion as we advance in knowledge, we are led to remark many circumstances in the progress of a disorder which had before passed without notice; but which, if known and duly attended to, would clearly point out the nature of the complaint. Hence the records of former cases are of much less value; as the symptoms about which we are now anxious to inquire, have in them been entirely overlooked." It therefore becomes necessary that each writer should state those circumstances to which he has been particularly attentive; nor need he further delineate the case than by a general outline, so as to render it intelligible.

The relation of cases may be compared to the representations which an artist gives of natural objects, and which are valuable only in as much as they are correct or vivid delineations of reality. Such

portraits, sketched by a person of dull perception or by one whose optics are perverted by prejudice and theory, are either valueless or deceptive; and hence perhaps, has arisen that objection to books of cases which I find to be very prevalent. In the imperfect sketches which I have laid before the public, my chief object has been to touch up and bring into view some parts of the subjects which have not been so clearly seen or strongly delineated by former draftsmen.

When books of this kind are published, mutual forbearance is requisite on the part both of the writer and the reader. The former should not expect his work to be approved of, till the latter has examined whether his representation of diseases be correct, and his conclusions legitimately drawn from the facts which he has observed and collected. Neither should the reader condemn the work till he has examined the subject, and is in consequence able to point out the errors of the premises or conclusions. The author's view of a subject may indeed be correctly formed from the facts which he himself has witnessed; but it may differ from that which more extensive experience would have suggested. For this difference, no blame can properly be attached to him; he relates what has fallen under his own observation, and invites others to attend to the same facts.

I have been induced thus to offer my sentiments respecting the design, mode, and probable advantages of recording cases, not with a view of vindicating the plan which I have pursued, for that indeed cannot be necessary, since it is the same that has

been followed by the best authors on surgery. My object, by these remarks, has been to induce others to reflect how they may most effectually promote medical knowledge. No one can have thoroughly studied his profession without perceiving how susceptible it is of improvement, without discerning how inadequate the efforts of an individual must be towards the accomplishment of this purpose, and consequently without feeling an earnest wish to engage general co-operation in this desirable object.

In republishing my former writings, I have left out all that part which relates to physiology. The surgical facts contained in them will now be found incorporated with my later publications, under the same general head of Surgical Observations. I have also made those alterations and enlargements which a greater share of experience has dictated. The subjects have likewise been transposed. I have put at the beginning of the book those cases which show how much local diseases depend upon the general state of the patient's health, because I shall have frequent occasion to refer to this subject in the succeeding parts of the work.

I feel much gratified in finding, that, though a larger portion of experience has enabled me to add some new and striking facts to this edition, it has not shown me any thing that I ought to retract or materially to alter. This, indeed must be the case in a book containing only facts, and opinions not incautiously deduced from them. Several of the papers contained in these volumes met with very general and strong objection, which I considered as the greatest compliment that could be paid to them.

For if the views which I had taken of various practical subjects were different from those of others, and were ultimately found to be correct, the greater was the necessity for their publication.

SURGICAL OBSERVATIONS.

ON THE CONSTITUTIONAL ORIGIN, AND TREATMENT OF LOCAL DISEASES.

AN evil seems to me to have arisen from the artificial division of the healing art into the medical and surgical departments. This division has caused the attention of the physician and the surgeon to be too exclusively directed to those diseases which custom has arbitrarily allotted to their care. The effects of local disorders upon the constitution have, in consequence, been too little attended to ; and indeed I know of no book, to which I can refer a surgical student for a satisfactory account of those febrile and nervous affections which local disease produces, except that of Mr. Hunter.* The reciprocal operation of constitutional disorders upon local diseases has obtained still less attention. To investigate more particularly some parts of these subjects, and to submit them to public notice, are the proposed objects of the present paper.

No part of the animal body can in general be very considerably disordered without occasioning a correspondent derangement in other parts of the system. Such disorder has been considered by Mr. Hunter as the result of universal sympathy. This consent of the whole constitution with its parts manifests itself, in particular instances, by a greater disturbance of the functions of some organs than of those of others ; and from this circumstance diseases have derived

* Treatise on the Blood, Inflammation, &c.

the appellations, by which they are commonly distinguished. If the actions of the sanguiferous system be principally disturbed, and the temperature of the body subject to unusual variations, the disease is termed fever: if the nervous system be chiefly affected, a state of vigilance or of delirium may be produced: and when the functions of the muscular system are more particularly disordered, convulsions and tetanus take place. Though the disorder of particular organs thus gives a character and denomination to the disease, it is sufficiently evident, in the instances adduced, that the whole constitution is disturbed; while certain parts are chiefly affected, perhaps from unknown circumstances relative to the nervous system, or from a predisposition to disorder existing in the affected parts. It seems to be ascertained, that persons of particular constitutions are predisposed to those febrile actions of the sanguiferous system, which constitute the inflammatory fever; that there is a propensity to convulsions in children; and to tetanus in the inhabitants of warm climates.

It may be a fit subject for inquiry, whether it be possible for particular organs to become affected otherwise, than through the medium of the nervous system in general. Though some instances of sympathy are strange, and perhaps inexplicable, there are strong reasons for believing that the inflammatory fever, the state of vigilance and delirium, convulsions and tetanus, which arise in consequence of injuries of the limbs, are produced by irritation imparted to the brain, which, by a kind of reflected operation, occasions a greater disorder of some of the organs of the body than of others, and thus gives a character and denomination to the disease.*

* Mr. Hunter, who, with that patience and industry for which he was so remarkable, collected and examined all the facts which he had observed relative to the subject of sympathy, has divided it into continuous, contiguous, and remote. It is the remote sympathies, according to his division, of which I am now speaking.

The observations of Dr. Darwin on ocular spectra, and indeed the considera-

That the stomach and bowels are disordered by injuries and diseases of parts of the body, has been remarked by various persons ; but the subject has never been extensively surveyed, nor viewed with that accuracy of observation, which its high importance merits. It has been observed that sprains of tendinous or ligamentous parts produce sudden sickness ; and Mr. Hunter has attributed that shivering which is consequent to accidents, and attendant on some diseases, to the state of the stomach. It is known that in some local injuries from accident or operations, the stomach has appeared to be the part principally affected. But remarks on the affections thus induced in the digestive organs have been made only in a cursory manner ; and it is my intention to examine the subject more particularly. It also appears to me that the connexion of local diseases with the state of the constitution in general is either not sufficiently understood, or not duly regarded, by the generality of practitioners ; and I likewise mean to claim their particular attention to this subject. I shall in the first place select a case to show how the stomach and bowels, or, to speak yet more extensively, the digestive organs, may be affected from local disorder.

tion of the nervous functions in general, render it highly probable that sensation is not produced merely by impulses made on the nerves, but by means of actions excited by such impulses, which actions are continued to the sensorium. Nervous actions, then, may take place without the usually exciting causes : such actions may be continued through the medium of the reticular communications of nerves, and thus physiologically we may explain the continuous and contiguous sympathies. Actions also productive of sympathetic sensations may be supposed to take place through the media of ganglia or plexuses. In remote sympathies, however, we must suppose the actions which originate in an injured or diseased part of the body to be continued to the sensorium, and there to excite the actions of other nerves, &c. For a more full account of Mr. Hunter's opinions on these subjects, see the third lecture delivered in the Royal College of Surgeons, in London.

Sudden and violent local Irritation will sometimes produce an equally sudden and vehement Disorder of the digestive Organs.

CASE I.

A HEALTHY gentleman, about twenty-five years of age, was induced to submit to an operation for the return of an adherent omental hernia, rather in order to remove the inconvenience and apprehension which the disorder occasioned, than from any urgent necessity ; for any increased exertion in walking, or riding, produced the descent of a portion of intestine behind the thickened omentum, and obliged him to stop, and replace it : and he frequently could not accomplish the reduction without considerable difficulty. The application of trusses had been quite ineffectual in obviating these alarming inconveniences. The patient's diet on the day preceding the operation was scanty, and consisted of fluid substances. He took on the morning of the operation some Epsom salts and manna, which purged him twice, and seemed to have emptied his bowels. A portion of the omentum was cut off, and after two vessels had been tied, the remainder was returned. The operation was followed by general disorder of the system, manifested by a full and strong pulse, furred tongue, great anxiety, restlessness, and total want of sleep. The stomach was particularly affected, being distended, uneasy on compression, and rejecting every thing that was swallowed. He was bled largely in the evening, and took saline medicines, but could not be prevailed on to swallow any thing else, except some toast and water. The sickness had in some degree abated on the next day. A solution of sulphat of magnesia in mint-water was prescribed in small doses, given at regular intervals, in order to relieve the disorder and distension of the stomach, by procuring discharges from the bowels.* In the course of the day he took

* It is most probably the disorder of the brain first affects the stomach ; but the reaction of the latter affection is liable to increase and maintain the

an ounce of the salts, which were not rejected by the stomach ; yet he could scarcely be prevailed upon to take any thing else. The tongue was still covered by a thick yellow fur ; the skin was hot and dry, and the pulse frequent. As there was no particular tenderness about the hypogastric region, he was not again bled. The second night passed without any sleep. As the salts had produced no effect, the same medicine was ordered in an infusion of senna, with the addition of some of the tincture, which, by being given in very small doses, was retained. When, however, it seemed likely that no effect would result from this medicine, a grain of calomel was given at night, and repeated on the following morning. Still the loathing of food continued. The third night passed, like the former ones, without sleep, and in great anxiety. On the next morning, two pills, containing five grains of the pil. colocynth. and the same quantity of the pil. aloet. cum myrrhâ, were given every fourth hour. These procured no stool, nor produced any sensation which inclined the patient to believe that they would operate. Again he passed a sleepless night ; but, towards the morning, he felt his bowels apparently filling, to use his own expression, and a profuse discharge ensued. A dozen copious, fetid, and black evacuations took place between five and ten o'clock, and he had several others in the course of the day ; after which his appetite returned, his tongue became clean, and a sound and continued sleep succeeded.

That the chylopoietic organs were the parts chiefly affect-

former, by which it had itself been produced. The effects that result from the sympathy of the whole constitution with local disorder vary greatly both in nature and degree. Sometimes the brain is the part chiefly affected ; on these occasions the nervous energy appears to be much impaired ; and in some instances of this description, the patient gradually sinks, little fever or reaction of the constitution being observed ; in other instances, however, there is a low delirium, with a slight degree of febrile action ; and in others again, the delirium is more violent, and is accompanied with a proportional increase of fever, subsultus of the muscles, and convulsions. Sometimes other parts of the body or particular organs seem to be principally affected : indeed the variety of effects produced under the circumstances alluded to is such as to baffle description.

ed in this case can scarcely be questioned. The sickness, the tenderness of the parts in the epigastric region, the aversion to food, and the state of the tongue, all indicate that the stomach was much disordered. The insusceptibility of the bowels to the action of medicines, which would ordinarily have produced discharges from them, and the profuse evacuations which subsequently relieved the patient, prove that these viscera participated in the affection. The black colour of the discharges shows, I think, that the secretion of the bile was not healthy, and that the liver was affected with the other chylopoietic viscera.

It may be supposed, that the injury done to the omentum might contribute to produce the disorder of these organs, rather than of others. We do not, however, find that such effects commonly succeed to similar operations. The consequences in the present case were more severe than might have been expected, if it were not known, that an operation performed on a healthy patient is more apt to produce considerable disorder, then when performed on one whose constitution has previously sustained the irritation of a disease, for which the operation becomes necessary.

It is probable also that the restlessness and anxiety of the patient were aggravated, if not principally caused, by the state of the chylopoietic viscera; since the relief which took place in those parts on the renewal of secretions into them, certainly removed the nervous and febrile symptoms. That the discharges were the effect of secretion is proved by the absence of alimentary matter in the bowels, in consequence of the action of the purgative administered on the morning of the operation, and the abstinence both before and after that period.*

I could relate numerous cases in support of the inferences, which I have drawn from the preceding history; that local

* Two instances are recorded in Mr. Pott's works, of the operation for the reduction of an hernia being performed where no strangulation existed. See Pott's works vol. iii. pp. 295, 299. edition of 1783.

The operation in the case just related was undertaken upon the authority of

irritation acting on the nervous system may affect the digestive organs in a very serious manner, and thereby create great disorder of the whole constitution, which is afterward alleviated in proportion to the amendment that ensues in the state of those viscera. Such consequences of great local irritation must frequently occur to every one; it is therefore unnecessary to adduce more instances to support the opinions here delivered.

With respect to the treatment of cases of this description, it may be right to add, that the primary object should be to produce secretion from the irritable organs. In the case which has been related, and in many others recorded in this volume, the effect of secretions occurring from the disordered organs in relieving their irritable state is very manifest. In many instances opium will not prevent continual efforts to vomit, yet when by sulphat of magnesia, or purgatives administered in the form of pills, and clysters, stools are procured, the vomiting ceases, the stomach retains both food and medicine, and general tranquillity of constitution is as suddenly restored.

CASE II.*

A GENTLEMAN fell with his leg between the bars of an iron grating, which served as a window to a cellar. The part was much bruised, the skin grazed, and the tibia broken

these cases, which were both successful. I performed a similar operation on a patient whose life had been twice in imminent hazard from strangulation in a case of adherent epiplocele, in which a truss did not keep up the hernia, and the operation was followed by violent peritonitis, which could only be subdued by such copious and repeated venesection, as endangered the patient's life. These two cases have made such an impression on my mind, that I should be very averse in future to undertake similar experiments.

* This Case was printed in the first edition of this paper, but afterward suppressed as superfluous. It is now reprinted, because it is a striking evidence of the inexplicable disturbance of the vital energies, which is often the result of various fatal occurrences, though their immediate effects do not seem at all adequate to produce such general disorder.

into three or four pieces at its upper extremity. The limb was put up in splints by a neighbouring surgeon, and the next day the patient requested to see me in consultation. I attended for a few days, but every thing went on so well, that I discontinued my regular visits, and only called occasionally, without seeing the limb. There was no inflammation; the swelling which had been occasioned by the bruise had subsided, and where the skin had been grazed, two or three trivial ulcers had taken place, which obliged the surgeon to open the bandages and dress them daily. The patient's health had been so good, that about the middle of the fourth week after the accident, he had some friends to dine with him in his room, and afterward played at cards with them, and parted with them, in the evening, in high spirits. In the middle of the same night, the patient suddenly became delirious, and I was sent for to meet the other surgeon in consultation. The delirium was then so great, that the patient knew not the persons in the room. On looking at the leg, with a view to inquire into the cause of this unexpected occurrence, it was found, that one of the ulcers of the skin on the outside of the limb, on which his position had produced some pressure, had become deep, and apparently penetrated the fascia, so as to communicate with the fractured bone, and thus had converted a simple into a compound fracture. To this event we could not but attribute the sudden irritation of the constitution, and the delirium. Opium was immediately given, which quieted this disturbance in a considerable degree; so that on the next day the pulse was more tranquil, and there was no delirium. On the following day his stomach became affected; he was sick, could take nothing by the mouth, had the hiccough, and his abdomen was distended like that of a person in tympanitis; whilst the senses and intellect were not disordered as they had been. In this state he continued about twenty-four hours, when his sufferings were terminated by death. As some suspicions had arisen that the head or abdomen might have been hurt at the time of the

accident, the body was inspected ; but no injury of these parts was discovered. Upon examining the leg, it was found that the external wound communicated with the fractured tibia, which was broke into several pieces ; some of the fractures, ascending in a perpendicular direction, communicated with the joint of the knee. In this case the disease was of too short duration for observations to be made respecting the secretions of the chylopoietic organs ; but it was evident that there was a complete atony of the stomach and intestines.

A slighter Degree of continued local Irritation will produce a less violent Disorder of the digestive Organs.

If, then, vehement local irritation can produce a violent disturbance of the chylopoietic organs, it may be expected that a less degree of a similar cause will produce slighter effects of the same nature. Indeed, the foregoing case was related not merely because it seemed worthy of record by itself, but chiefly to prepare the reader for the observations which are to follow.

This slighter degree of disorder occurs in the advanced stages of lumbar abscess, diseased joints, compound fractures, and all kinds of local disease, which impart considerable and continued irritation to the whole constitution. We also find a less important disease, as for instance, a fretful ulcer, keep up a disorder of the system in general, and of the digestive organs in particular, which subsides as the irritable state of the ulcer diminishes. But as practitioners in general may not perhaps have so attentively remarked these circumstances as to be familiarly acquainted with them, it may be useful to notice a very common occurrence, which cannot have escaped observation. I allude to the effects of the irritation of teething upon the health of children. The brain is sometimes so affected as to cause convulsions ; the digestive organs are almost constantly disordered. The appetite fails ;

the tongue is furred; the secretions of the liver are either suspended, diminished, or vitiated. The bowels are either purged or costive, and the *fæces fetid*. The *fæcal* matter is often mixed with mucous and other secretions. There is also frequently a very troublesome cough. Such symptoms generally subside when the local irritation ceases, but sometimes the disorder of the digestive organs, thus excited, continues and disturbs the general health of the patient.

If local irritation be capable of disordering the bowels, it seems natural to conclude that it acts upon them through the medium of the brain. If also the brain and nervous system should be disordered, without any apparent local disease, similar derangements may be expected to take place in the functions of the digestive organs. In cases, where some morbid poison has been absorbed, producing effects similar to those of syphilis, we usually find the irritation of the constitution which ensues, to be accompanied with this slighter disorder of the chylopoietic organs.

Whenever, also, the nervous energy and general powers of the constitution have been weakened and disordered by any violent disease, as fever, smallpox, measles, hooping-cough, &c. the digestive organs are frequently affected in consequence, and such affection becomes, as will afterward be explained, the cause of many secondary diseases.

In persons, likewise, who have naturally a weak or irritable state of the nervous system, we find the digestive organs disordered in a similar manner. Improperities in diet will also produce a similar state of irritation, weakness, and disorder of the functions of the digestive organs.

This slighter disorder of the chylopoietic organs is, in general, manifested by a diminution of the appetite and digestion, flatulence, and unnatural colour and *fœtor* of the excretions, which are generally deficient in quantity. The tongue is dry, whitish, or furred, particularly at the back part; this symptom is most apparent in the morning. The fur is greatest at the back part, and extends along the middle of the tongue to the tip, the edges remaining clean. As the

disease advances, a tenderness is felt when the epigastric region is compressed, and the patient breathes more by the ribs, and less by the diaphragm than in the healthy state. The urine is frequently turbid.

In this general enumeration of the symptoms, several circumstances are omitted which occur occasionally, and which may, when the subject shall be better understood, denote peculiarities in the disease, and require corresponding peculiarities in the medical treatment. I shall here notice a few of them. The appetite is sometimes moderately good, when the digestion is imperfect; and the latter may not be defective, although the disease still exists. In some instances, indeed, the appetite is inordinate. Tenderness of the epigastric region on pressure, is not always an attendant, even in advanced stages of the disease. The bowels are alternately costive, and lax even to purging.* The urine is sometimes pale-coloured, and copious like that of hysterical patients.

Patients affected in the manner above described commonly declare they are in good health, except that they feel disturbed by their local complaints; yet they are found, on inquiry, to have all the symptoms, which characterize a disordered state of the digestive organs. The mind is also frequently irritable and despondent; anxiety and languor are expressed in the countenance. The pulse is frequent or feeble; and slight exercise produces considerable perspiration and fatigue. The patients are sometimes restless at night, but when they sleep soundly they awaken unrefreshed, with lassitude, and sometimes a sensation, as if they were incapable of moving. Slight noises generally cause them to start, and they are, to use their own expression, very nervous. These circumstances seem to me to indicate weakness and irritability of the nervous and muscular systems; which, in addi-

* I have known persons whose bowels were ordinarily costive, and whose general health was much deranged by disorder of the digestive organs, though they were unconscious of its existence, feel pleased that their bowels were in a comfortably lax state; yet on observing the stools, they resembled pitch in colour and consistence.

tion to the disorder of the digestive organs, that has been described, are the chief circumstances observable relative to the general health of those patients, whose cases are related in the following part of this paper. By correcting the obvious errors in the state of the digestive organs, local diseases, which had baffled all attempts at cure by local means, have speedily been removed, and the patient has acknowledged that such an alteration has taken place in his general health, as greatly excited his surprise.

A Review of the natural Functions of the digestive Organs, and an Inquiry into the Signs which denote them to be in a healthy or disordered State.

BEFORE I proceed, I may be allowed to enter more fully into a consideration of the symptoms which denote disorder of the digestive organs; in order to induce surgeons to pay that strict attention to them, which the importance of the subject so well deserves. It would indeed be impossible for the reader to understand, without such prefatory observations, my object in the treatment of the cases which will presently be related, or the opinions which I have formed, relative to their mode of cure.

The changes which the food undergoes in the digestive organs of the more complicated animals are threefold; and distinct organs are allotted to each of the three processes. Digestion takes place in the stomach; chylicification in the small intestines: and a third process, hitherto undenominated, is performed in the large intestines. It is probable that in some cases, one set of organs may be more disordered than the others, and of course one of these processes may fail more than the rest. For instance, the stomach may digest the food in a healthy manner, although the intestines do not perform their share of the changes, which they ought to effect.

The food is converted in the stomach into a viscid semi-

transparent substance called chyme ; and that this change is effected by the agency of the succus gastricus, is a point as well ascertained as any in physiology.* In a state of health this conversion takes place without any appearance of that natural decomposition which animal and vegetable matter would ordinarily undergo in a warm and moist place. When, however, digestion is imperfect, gaseous fluids are extricated from the alimentary matter. Vegetable food becomes acid, and oils become rancid. Uneasy sensations are also felt, and undigested aliment may be observed in the fæces.

Disorder of the stomach is however more readily perceived by adverting to the state of the tongue, which often indicates an irritable and unhealthy condition of the stomach, when no manifest symptoms of indigestion occur. If there be no fever to disturb the secretions in general, the change which is visible in the tongue can be imputed to no other causes than its local disease, or a participation in a disorder of the stomach or lungs. Local irritation or mental anxiety will cause a white and dry tongue ; but does not this effect arise through the medium of an affection of the stomach ? For although the secretions of the tongue must partake of the general disturbance which prevails in fever, their especial disorder may be, in that case also, not improperly attributed to the state of the stomach.

The state of the tongue is, in general, an infallible criterion of a disordered condition of the stomach ; but it does not point out the kind and degree of that disorder. In recent and considerable affections, where the appetite is lost, and the digestive powers are greatly impaired, the appearances of the tongue are by no means so strikingly unhealthy as in more confirmed cases, where neither the appetite nor digestion appear materially deficient. It is probable that a continuance of irritation in the stomach may so affect the tongue, as to render unnatural secretions habitual to the part, and that these exist independently of the original cause, or

* Vide the Fourth Physiological Lecture.

may be reproduced by trivial degrees of disorder. Nay, sometimes the cuticle of the tongue seems to have lost its transparency, and to become permanently white, in consequence of continued irritation.*

After making the allowances, which such circumstances require, we may in general be enabled to detect a disordered state of the stomach by observation made on the tongue; and, as it is of consequence to ascertain such disorder at an early period, when the symptoms are probably slight, this organ should be observed in the morning, when it will be found much furred, particularly at the part next the throat. Its appearance may vary in different parts of the day from varieties in the state of the stomach, depending on the excitement which is derived from food, or a state of irritation arising from too long fasting. The tongues of many persons with disorder of the stomach look moderately healthy during the day, though they have been so much furred in the morning, that it has been deemed necessary to scrape them.

A disordered state of secretion, either as to quantity or quality, will be the natural effect of irritation of a secreting organ. This is evidently the case with the tongue; and we may, with great probability, conjecture that the same consequence also takes place in the stomach. As likewise the juices of the stomach are the immediate agents in digestion, that process must be disturbed in proportion as its secretions are deficient or vitiated.

If undigested matter pass from the stomach into the intestines, it can scarcely be supposed that their powers are capable of converting it into chyle; and it may become irritating to those organs in consequence of the chymical changes, which it may then undergo. When digestion is imperfect, animal and vegetable substances experience considerable chymical changes before they leave the stomach; and similar

* In hectic fever, although the stomach may be very weak, the tongue is generally clean; it is therefore probable that the foulness of the tongue denotes irritation of the stomach, and not mere weakness when accompanied with tranquillity of that organ.

changes may continue to take place during the time they are detained in the bowels, unless counteracted by the powers of the digestive organs; powers which seem chiefly to belong to the fluids which are secreted into them.

The extent of the power which the intestines possess of converting what they receive from the stomach into chyle, or of preventing chymical changes, is unknown. It is probable that much undigested matter is absorbed by the lacteals, when the digestive powers fail in their functions. This is apparently the case in diabetes, where the vegetable matter floats in the serum of the blood, rendering it turbid, and afterward combines so as to form a substance resembling sugar in its passage through the kidneys. The strong odour, which various kinds of food impart to the urine, indicates that different substances are absorbed indiscriminately from the intestines. It is probable that a turbid state of the urine, and variations from its natural colour, and odour when healthy, may very frequently arise from a similar cause; *viz.* from the imperfect action of the digestive organs, in consequence of which, unassimilated matter is taken up by the lacteals, and afterward separated from the blood in the kidneys. It may be reasonably conjectured that the same powers, by which the kidneys convert the old materials of our body into that peculiar modification of animal matter, which is dissolved in the water of the urine, and which has been called by the French chymists *urée*, may also enable it, in a healthy and vigorous state, to dispose of much unassimilated substance in the same way. The further consideration of the subject would, however, lead to a discussion foreign to the purpose of the present paper: it will be sufficient to remark at present, that the state of the urine may afford assistance in ascertaining the existence of disorder of the digestive organs, and in indicating its nature. It has been already mentioned in the brief account of the symptoms, that the urine is frequently turbid. It should, however, also be observed, that the quality of the urine greatly depends on the state of the nervous system. It is frequently, in the disorders of

which I am speaking. pale-coloured and copious ; which is probably owing to a state of nervous irritation, such as exists in hysteria. It is probable that disorders of the digestive organs, by causing the frequent secretion of unnatural urine, may produce irritation, and subsequent disease of the kidneys, and other urinary organs.*

Modern physiologists seem to agree in the opinion that the succus gastricus is the agent, by which digestion is effected ; but they are not so unanimous as to the immediate cause of chylification. It is not improbable that the succus intestinalis is a principal agent, although its qualities have not yet been inquired into ; for, indeed, the investigation would be attended with difficulties almost insuperable.

Since the bile and pancreatic liquor are poured into the intestines, at a small distance from the stomach, it is natural to consider these fluids as useful in effecting the change, which the alimentary matter undergoes in the small intestines, namely, its conversion into chyle. The chyme, or aliment digested by the stomach, being viscid, the pancreatic juice has been considered as a useful and necessary diluent, and perhaps this fluid may have other properties with which we are unacquainted.

The uses of the bile have of late much engaged the attention of physiologists. Mr. Hunter observed that it did not seem to incorporate with the chyle : and it certainly cannot do so and retain its own nature, since its colour and taste are so intense, that it would impart these properties to the chyle, if mixed with it in the smallest quantity. The difficulty of conceiving that the two fluids can be agitated together by the peristaltic motion of the intestines, without becoming incorporated, has led to an opinion that the bile may combine with the alimentary matter, and lose its original properties ; but nothing of this kind is ascertained. Fourcroy thinks that

* I have met with several cases in which a temporary suppression, or want of secretion of urine took place, in consequence of disorders of the digestive organs. As the splachnic ganglions supply both the digestive organs and kidneys, a community of disorder in them might naturally be expected.

the alkali and saline ingredients of the bile may combine with the chyle, and render it more fluid, while its gelatinous and resinous parts may combine with the excrementitious matter. It is, indeed, evident that the bile combines either totally or partially with something separated from the chyle, and exists formally in it, and in a state of health uniformly dies it of its peculiar colour; and therefore it has of late been supposed, that the bile may serve to purify the chyle, by precipitating and combining with its feculent parts.*

It has been said in the brief and general recital that has been given of the symptoms, which characterize disorder in the chylopoietic organs, that the stools are of an unnatural colour and odour. Medical men entertain various opinions respecting the colour of the fæces: to me this property seems generally to depend on the kind and quantity of the bile. All the healthy secretions, which are poured into the alimentary canal, except the bile, are colourless or white; if, therefore, this fluid were wanting, the residue of the aliment would be of the colour, which might be expected to result from its undigested parts combined together. When, for instance, the secretion of bile is stopped by the irritation of teething in children, whose diet is chiefly bread and milk, the fæces are white; when this secretion is obstructed in adults, the stools are pale, like whitish-brown paper.

In cases of disease, however, coloured excretions may take place from the bowels. There is great reason for ascribing the discharges in the disease called *melæna* to a vitiated secretion from the surface of the alimentary canal. I was intimately acquainted with a patient, who suffered repeated and increasing attacks of constitutional irritation. When the disorder was wrought up, as it were to a crisis, he was

* In the inquiry into the probable uses of the bile, it ought to be observed, that in many persons, in whom that secretion is either for a considerable time wholly suppressed, very deficient, or much depraved, it does not appear that the nutrition of the body is defective. A further account of the digestive processes may be found in the fourth of the *Physiological Lectures*, delivered before the college of Surgeons, in 1817.

forewarned by a sensation, as if his stomach was filling, of the occurrence that was about to take place. In less than a quarter of an hour he would vomit more than two quarts of a fluid resembling coffee grounds in colour and consistence. Shortly afterward very copious discharges of a similar darker coloured and offensive matter took place from the bowels : but a green viscid bile, appearing distinct and uncombined, was intermixed with this. These evacuations ceased in a day or two, and the constitutional irritation disappeared with them.

I examined the bodies of several persons, who died under attacks of this nature, and found the villous coat of the alimentary canal highly inflamed, tumid, and pulpy. Bloody specks were observed in various parts; and sphacelation had actually taken place in one instance. The liver was healthy in some cases, and diseased in others. I conclude, therefore, that these diseases, which were termed hæmatemesis and melæna, arose from a violent disorder, and consequent diseased secretion of the internal coat of the bowels : and that the blood, discharged when the affection was at its height, did not flow from any single vessel, but from various points of the diseased surface.

Indeed I think it probable, that the profuse discharges, which sometimes follow the continued exhibition of purgatives, consist of morbid secretions from the bowels themselves, and not of the residue of alimentary matter detained in those organs. Such evacuations, either occurring spontaneously, or excited by medicine, generally relieve irritation of the chylopoietic viscera. *

* As a direct proof of the secretions of the bowels resembling fæces, I insert the following case, which occurred to Mr. Hallam, an intelligent and experienced practitioner residing in Wolworth Road. He delivered a patient of a fine muscular, fat, and healthy child, but which had an impervious œsophagus, so that no food ever passed into its stomach. The child lived for thirteen days, and was so wasted that its skin hung like a loose garment, and could be folded and lapped over its limbs. At first the child discharged the usual quantity of meconium from the bowels, and afterward had, during eight days, one or two alvine evacuations, in quantity, colour, and consistence, not distinguish-

It seems probable that the stools which resemble pitch are principally composed of diseased secretions from the internal surface of the intestines, since they do not seem either like the residue of the food or discharges from the liver. Can we suppose that all the black and fetid matter which was discharged from the bowels, in the first case that I have related, was poured forth solely from the liver?

The subject of morbid secretions is however particularly illustrated by that well-known alvine discharge, which so much resembles yeast in colour and consistence, that it cannot be confounded with fæces, with blood, or with a vitiated secretion from the liver. A medical man of my acquaintance took, for some disorder in his stomach and bowels, an aperient medicine, which apparently emptied those organs. He ate nothing but a little bread in broth for his dinner, and a small quantity with his tea in the evening. He experienced an uneasiness in his bowels, and an inclination to evacuate them after he had gone to bed; but he resisted this desire till four o'clock in the morning, when its urgency forced him to rise. He then discharged, what he supposed to amount in quantity to a gallon, of a matter exactly like yeast, unmixed with any bile or fæces. When he arose in the morning, he had a similar evacuation of about a quart; and on the succeeding day there was a solid stool, apparently of the same substance, coloured of a light green from an admixture of bile. He had a natural stool the next day: his appetite returned, and the uneasy sensations subsided, upon the yeast-like discharge taking place.

An unhealthy colour of the fæces may further be attributed to some degeneracy in the quality of the alimentary matter; such as may be supposed to take place when the digestive organs fail in the performance of their offices, and different alimentary substances are in consequence detained in the bowels, where they may pass through chymical decompo-

able from the stools of children who take food in the usual manner. After the eighth day the discharges per anum became more scanty and less frequent, but they continued to the last.

sitions, and recombinations. But, though I am inclined to allow the full operation of these causes, the following reasons lead me to believe that the colour of the *fæces* generally depends on the kind and quantity of the bile. In the natural state of the digestive organs, when there is no peculiarity of diet, and no medicine is taken, the bile alone colours the residue of the food. The *fæces* voided during a state of disorder of the digestive organs are sometimes partially coloured; which circumstance cannot be well accounted for upon any other supposition than that of an irregular secretion of the bile. Fluids secreted from the intestines do not usually enter into combination with the *fæcal* matter, but appear distinctly when excreted. Thus we find mucus and jelly discharged from the bowels, unmixed with the *fæces*. Medicines which affect the liver produce a very sudden change in the colour of the *fæces*. Small doses of mercury, without any alteration of diet, sometimes change the stools immediately from a blackish to a light yellow colour, which indicates a healthy but deficient secretion of bile.

The appearance of healthy bile in the human subject is that of a deep brown, resembling a mass of powdered rhubarb when just moistened with water. Yet if bile be dropped into water, a single drop will die a large quantity of water of a bright yellow, so that the deep brown appearance is the effect of the intensity of the yellow colour. In health there ought to be so much bile poured into the bowels, as when commixed with the residue of the food, to die it of the peculiar colour of bile. It is right, however, to say that the colour of the bile may vary considerably without any apparent disorder of the organ which prepares it, or of the health in general. Sometimes, indeed, we find green bile in the gall-bladder, when the liver is not diseased. I cannot, however, but think that the natural colour is a yellow, so intense as to appear brown. Green bile is usually poured out in circumstances where there is evident disorder of the digestive organs; and we cannot well suppose that there are two kinds of healthy bile. The quantity of this fluid should

be such as completely to tinge the excrement of its peculiar colour. By attending, therefore, to the colour of the *fæces*, the kind and quantity of bile, which the liver excretes, may in general be ascertained.

The colour of the alvine excretions in disordered states of the viscera is various. Sometimes they appear to consist of the residue of the food, untinged by bile. Sometimes they are of a light yellow colour, which denotes a very deficient quantity of healthy biliary secretion; they may also be of a deep olive, of a clay brown, and of a blackish brown, all which show a vitiated state of the biliary secretion.

Any kind of brown, which dilution will not convert into yellow, I should consider as unhealthy, since the colour of healthy bile is a bright yellow, which by concentration appears brown.

Such are the circumstances which I have collected from my own observation, and the reports of others, relative to the alvine excretions, in the disorders which have been described.

I have dwelt thus particularly upon the subject of the biliary secretion, from a belief that its quantity and quality can, in general, be ascertained by inspection, and will therefore serve to indicate the presence of disorder. Whether the foregoing opinions be correct or not, it will, I think, be generally granted that the excretions from the bowels commonly indicate the healthy or disordered state of the digestive organs. By the state of the *fæces* we may judge how far digestion has been effected; and gelatinous, mucous, and other matters being mixed with them, denote irritation or disease of the bowels.

The effects, which medicine or diet may have upon the colour of the *fæces*, ought, however, to be considered. When the food is coloured, and this colour is not altered by digestion, it will, of course, appear in the *fæces*; hence, if it should be thought desirable to know accurately the state of the biliary secretion, it would be right to restrict patients to a diet that is not likely to colour the *fæces*. The green

colour of vegetables tinges the fæcal residue of the food. Steel also is known to blacken the fæces. It should, too, be remarked, that the exposure of the fæces to air after their expulsion, will, in some instances, cause a considerable alteration in their colour. In our endeavours, therefore, to ascertain whether the liver is performing its office rightly, by observing the colour of the fæces, attention should be paid to these circumstances.

I conclude this review of the opinions entertained respecting chylication, by observing, that if the succus intestinalis be an agent in this function, disorder of the intestines is likely to affect its secretion, and thus impede this second important part of the process of assimilation.

The residue of the alimentary matter, mixed with the bile, passes from the small into the large intestines, and there undergoes a sudden change; it acquires a peculiar fœtor, and becomes what we denominate fæces. This change is so sudden, that it cannot be ascribed to spontaneous chymical alterations (which would be gradual,) but it must be attributed to some new animal agency. If the contents of the small intestines at their termination, and of the large at their commencement, be examined, they will be found totally different, even within a line of each other; the former being without fœtor, and the latter being in all respects what is denominated fæces. Though chymists, then, might speak of the feculent matter of chyle as fæces, yet physiologists would rather apply that term to the change in the residue of the food, which takes place in the large intestines, and which seems to be effected by the vital powers of those organs. The fæces quickly suffer chymical decomposition out of the body, although they often remain in the bowels without undergoing the same kind of change. Their chymical decomposition is attended with the sudden formation of ammonia; yet if they be examined when recent, they are found to contain acids, which ammonia would neutralize. The inference, therefore, naturally arises, that this third process, I mean the conversion of the residue of the aliment into fæces, may, among other

puposes, be designed so to modify that residue, as to prevent it from undergoing those various chymical changes which might be stimulating to the containing organs, as well as injurious to the general health.

In a perfectly healthy state of the digestive organs, probably no chymical decomposition, even of the *fæces*, takes place; yet such changes happen, in some degree, without apparently producing any injurious consequences. To chymical changes we may probably attribute the extrication of inflammable air, and the various and unhealthy odours of the *fæcal* matter, which are observable in disordered states of the digestive viscera.

The means by which this modification of the residue of the food, which takes place in the large intestines, is effected, are but little known. Analogy leads us to refer it to the effects of a secretion from the lining of those intestines in which it occurs. Now if this secretion deviates from the healthy state, in consequence of an irritated or disordered condition of those organs, we may reasonably expect a corresponding failure of the process, by which the residue of the food is converted into *fæces*; and consequently, great irritation will be excited in the lower bowels by their putrefying contents, which may produce especial disease in them.*

* The public attention has of late been much directed by Mr. White, of Bath, and others, to the numerous instances of contraction in the lower part of the bowels, produced in consequence of this greater degree of disorder occurring in them. To show how much such contractions depend upon the general condition of the alimentary organs, and are curable by its correction, I relate the following case, which happened about twenty years ago. A gentleman, who supposed all his complaints arose from piles, applied to me for advice. He had a contraction in the rectum, as high up as I could reach, into which I could scarcely introduce the point of my finger. His tongue was much furred, and the biliary discharges very faulty. When he arose in the morning he immediately felt an urgent desire to void the excrement, and parted with but a small portion, extenuated to the size of a common quill, which was smeared over with mucus and sometimes with a little blood. This urgency to discharge the contents of his bowels lasted till about three o'clock of the day, when, after twenty or thirty efforts, he had voided as much *fæces* as equalled in bulk a scanty diurnal discharge, occurring in the ordinary manner. He then had a respite from his labour and annoyance till the following morning. He slept well during

Farther Inquiry into the Nature and Effects of that Disorder of the digestive Organs, the Symptoms of which have been recited at Pages 17, 18.

HAVING taken this general view of the functions of the chylopoietic viscera, in order to facilitate the forming a judgment relative to those circumstances which indicate their disorder, I return to speak more fully of that affection of them, which I have described, as arising from causes recited at page 17, &c. This subject, it must be acknowledged, is very important, if it can be shown that disorders of the digestive organs are the cause of a great number of other diseases.

the night, but as soon as he changed the position of his body from the horizontal to the perpendicular direction, his daily disquiet and labour were renewed. I recommended the patient to take a dessert spoonful of castor-oil every night, in order to excite the bowels to carry down the fæcal matter in a state likely to pass the stricture, and also to take five grains of the pilul. hydrarg. every second night. I advised him further to throw up as much thin gruel and oil as he could get to ascend every morning before he arose from his bed, in order to liquify the fæcal matter and facilitate its passage. This was accomplished by means of a syringe, with double valves, admitting fluid in one direction and propelling it in another, having one pipe immersed in a large basin containing the clyster, and another which was introduced into the rectum. He said he felt the clyster fill the lower part of his bowel and gradually ascend through the stricture, and then he pumped up a little more, till by degrees so much had been injected as to create an uncontrollable desire to evacuate the bowels. This augmentation of the contents of the bowels above the stricture probably induced a more efficient action of them, for he never failed to obtain so copious a discharge of feculent matter as left him in quietude till the following morning. The patient afterward threw up a small opiate clyster, and lay in a horizontal position till the bowels appeared to be tranquil, when he rose, and felt no disturbance during the day. This practice was not continued more than four or five weeks, as it did not appear necessary, for the bowels then relieved themselves in the usual manner. I occasionally saw the gentleman whose case I have just related, for twelve years afterward, and he had no return of the affection of his bowels, though he was not in good health, and often consulted physicians, on account of irregular actions of his heart, and of renal disorder. I may mention, that it is sometimes necessary to introduce a varnished catheter through the stricture, in order to inject a clyster. In relating this case I do not mean to undervalue the use of tents, or bougies, which seem to do the same kind of good that they do in strictures of the urethra, and which should be employed for the same purposes upon the same principles.

The inquiry would then not only lead us to discover the source of many disturbances of the constitution, which originate in those of the digestive organs, (for patients have no suspicion of any disorder existing in them,) but would also lead to the prevention and cure of many secondary diseases of a more vexatious and sometimes of a more fatal nature, than those from which they originated.

If the tongue be furred at its back part in the morning, when there is no fever, it is reasonable to infer in general that the state of the tongue is owing to its participating in the irritation of the stomach. Such participation produces an alteration in the secretions of the tongue ; they are either deficient in quantity, or vitiated in quality. A state of irritation in any secreting surface is, indeed, likely to be attended with the same consequences. It is, therefore, fair to infer, that, when a general disorder of the digestive organs takes place, those fluids, which produce the changes that the food undergoes in them, are deficient or depraved, and consequently that digestion and the subsequent processes must be imperfectly performed. The liver is likely to participate in the disorder, and the biliary secretion to be diminished or vitiated. This circumstance admits of ocular demonstration ; and I have, therefore, considered it as an evidence of a more or less general disorder of the digestive organs. A very reasonable objection may, however, be made to considering the derangement of the functions of the liver as a criterion of those of the stomach and intestines : since the liver is independent of the latter organs, and may be the subject of a disorder confined to itself. In some cases, also, the alimentary canal may be affected without disturbing the liver. Such circumstances may happen occasionally ; but they are not ordinary occurrences, and should be considered as exceptions to general rules, which do not militate against their common operation. In general, affections of the former, influence the functions of the latter ; and the state of the biliary secretion affords a very useful evidence of a more or less

general disorder of the chylopoietic viscera, and should excite our attention to investigate its kind and degree.

I have stated, in describing the symptoms which denote disorder of the digestive organs, that the *fæces* are generally deficient in quantity. This circumstance may be accounted for in various ways. It may be ascribed to diminished or unhealthy secretion of bile, which does not precipitate the usual proportion of feculent matter from the chyle. Persons whose bowels are lax, and not inactive in carrying downwards the feculent matter, void it daily in deficient quantities. It may be supposed, too, that, either from the deficiency of bile, and consequent want of excitement, or from the effects of disorder, a torpid state of the bowels may exist, which causes them to carry downwards the feculent matter in small quantities. This circumstance may produce a greater absorption of the *fæces* than what is natural, or an accumulation of them in the colon.

That the digestive organs in general were affected in the cases of local disease which I am about to record, is most evident ; but I am aware that many varieties of disorder may be included in the general description of the symptoms which I have given. Future observations may lead to further distinctions : but I see no impropriety at present in speaking of the disordered state as general, since it is probable that no material disorder can ordinarily take place in one of the digestive organs, without disturbing the functions of the others. When digestion is imperfectly performed, the functions of the intestinal canal will soon participate in the disorder of the stomach. Under these circumstances, the secretion of bile will also probably become irregular. Should disease commence in the large intestines, as about the rectum, it disturbs the functions of the stomach, and secretion of the liver, and becomes augmented in its turn by its sympathy with these parts. Should the liver be disordered in the first instance, the stomach and bowels may not immediately sympathize, although they will probably soon become affected.

I feel further warranted in considering the symptoms which

have been recited in the former part of this paper, as arising from a general disturbance of the functions of the digestive organs, from contemplating the effects of blows on different parts of the belly, which do not seem to have injured the structure of any single abdominal viscus, but yet produce effects denoting a general disorder of these organs. The symptoms have varied in severity, in proportion to the violence of the blow received. In the cases which were the consequence of the more forcible injuries, the symptoms were, a furred tongue; great vomiting, so that the stomach could retain no food; difficulty of affecting the bowels by medicine; great fever, and even delirium. Indeed, all those effects were produced, which I have represented as arising from vehement local irritation of remote parts of the body. The disorder has generally terminated by a profuse discharge of black and fetid stools, after which the patient has perfectly recovered. On the contrary, where the symptoms consequent on the blow have been less violent, so as not to claim such strict attention, the disorder has continued. Persons who had been previously in perfect health, have become hypochondriacal, and have had all those symptoms of disorder of the digestive organs, which have been already enumerated as arising from a less degree of local irritation, with such consequent diseases as originate from such disorder, and which will be mentioned in the subsequent part of this paper.

In order to inquire more particularly into the nature of this disorder of the digestive organs, I have examined the bodies of a considerable number of persons who have died of diseased joints, lumbar abscesses, and other great local diseases. I knew that these patients had their digestive organs disordered in the manner that I have described, and that in many of them the secretion of bile had been suppressed for a great length of time; and, when it was renewed, that it was very deficient in quantity, and faulty in quality: yet, on dissection, no alteration was discovered in the structure of the chylopoietic viscera which could be decidedly pronounced to be the effect of disease. It naturally excites surprise, that such

a state of irritation, and imperfect performance of the natural functions of these parts, should exist for so long a time, as in many cases it is known to do, without producing organic disease ; still I believe it may be set down as a truth, (which has been verified by every observation I have made,) that a state of irritation leads to those diseased vascular actions, which produce an alteration of structure in the irritated parts.

However, where the disordered state of the bowels had been of longer duration, I have found the villous coat of the intestines tumid, turgid with blood, and apparently inflamed, and sometimes ulcerated ; and these appearances have been most manifest in the large intestines. Having observed repeatedly, in dissections of these cases, that the large intestines were more diseased than the small ones, it occurred to me that the fact might be accounted for in the following manner : If digestion is incomplete, the undigested food must be liable to chymical changes, and the products resulting from this cause are likely to be most stimulating to the large intestines. Indeed, in advanced stages of this disorder, mucus and jelly, tinged with blood, are discharged ; and it seems probable that a kind of chronic dysentery may be thus induced.

In some instances, where the disorder had existed for many years, the bowels have been diseased throughout their substance ; the internal coat being ulcerated, and the peritoneal covering inflamed, so that the convolutions of the intestines were agglutinated to each other. In these cases the liver, and sometimes the spleen also, were much diseased, being tuberculated in every part. Such is the result of the information which I have obtained by dissection.

Accurate attention to the subject, especially in medical cases, may lead to important subdivisions, which I have not yet been able to make. But when I find that irritation of the nervous system, however it may originate, deranges the chylopoietic organs, and affects the stomach, bowels, and liver apparently at the same time, I think it fair to infer that these organs are equally operated on by the same cause. Disorders of the brain may affect the chylopoietic organs ; and it is well

known that this influence is reciprocal. The stomach is said to be chiefly concerned in producing these effects ; but the causes of the sympathetic affection are probably more general. A fit of passion has produced jaundice ; and the irritation of teething, in children, frequently suspends the secretion of bile ; so that the stools are not in the least degree tinged with that fluid. If the head can thus affect the liver, it is reasonable to infer that the liver may reciprocally affect the head. It is very difficult to form an opinion relative to this subject ; for, in the instances which have been mentioned, the affection of the liver may take place, only because it forms a part of the digestive organs, and not from a direct sympathy existing between it and the head. Still, however, I do not think it unreasonable to conclude that irritation of the other chylopoietic organs may, as well as that of the stomach, disorder the source of sensation.

To display how much hepatic irritation may affect the sensorium, and consequently the whole nervous system, I insert the following case.

CASE III.

A gentleman applied to me with a thickened and tender state of the periosteum of his tibia. This disease had troubled him for more than a year, but became at last so extremely painful that he declared he had not slept for three months, and that his life was so intolerable that he resolved to undergo a course of mercury, even though, in the opinion of those surgeons whom he had consulted, his disease was not venereal. The duration of the disease, as it had made no greater progress, induced me to coincide in the opinion which had been given him. His tongue was much furred, his appetite was moderate, and he was not conscious that his digestion was otherwise than good. His bowels were perfectly regular. I desired him to take five grains of the pilul. hydrarg. every second night ; but before he took them, to remark the colour of the discharges from his bowels, and to observe whether the

medicine produced any change. In a week's time he called upon me, and said, "I come to tell you the strangest thing that perhaps you ever heard, which is, that I actually do not know the precise spot where the lump on my shin was situated, and doubtless these pills which you directed are a most wonderful compound of opium. The first gave me sleep, which I had not had for three months. After having taken a second, I have slept soundly all night, and felt myself alert in the day. Every other preparation of opium which I have taken, failed in producing sleep, and made me ill during the succeeding day. After all," continued he, "it cannot be the pills that have made me well, for they have had no perceptible effect on me." I asked him, had he, as I requested him, remarked the colour of the alvine discharges? He replied, he had, and that before he took the medicine they were (to use the patient's own words) as black as his hat, and now they were the colour of a ripe Seville orange. The great relief arising from the correction of the biliary secretion was not to me so strange as the patient expected. It is doubtless such remarks that have impressed some medical men with the opinion, that the liver was the root of the evil in all disorders of the digestive organs.

Cases like the present, (and several similar ones will be found recorded in this work,) appear to me highly valuable on many accounts. They show that hepatic disorder may disturb the sensorium, either immediately, or intermediately, by disordering other organs concerned in digestion; they show how disorders of the abdominal viscera may become the cause of various other diseases, by disturbing the source of sensation and nervous energy; and they further show that unirritating and undebilitating doses of mercury have, probably by their local action in the bowels, a great influence in correcting the secretion of bile, and by this means of relieving hepatic irritation.*

* To show how stomachic irritation may induce or maintain a general disturbed state of the nervous system, I shall briefly relate the chief circumstances of a disorder which occurred in my own person. Having, in consequence of

Nothing in pathology is more generally admitted, than the reciprocal operation of disorders of the head and of the digestive organs on each other : yet the exceptions to this general rule deserve to be remarked in a comprehensive examination of the subject. Some persons have great disorder of the digestive organs, without any apparent affection of the nervous system ; and even diseases of a fatal nature may take place in the former organs without affecting the latter. Indeed, if we examine any of the most evidently sympathetic affections, we shall find the same exceptions. The stomach generally sympathizes with disorder of the uterus, but it does not invariably do so.

Many of the symptoms recorded in the description of the state of health of those persons who are affected by disorder in the digestive organs, denote a disturbance of the nervous and muscular powers. When we observe this compound disorder, we can seldom determine which were the primarily

dissection, had some morbid animal-matter imbibed from a cut on my finger, I suffered at first from severe fever, which, subsiding, left me much indisposed. I then became subject, occasionally, to considerable and painful ulcerations of my throat, and to severe rheumatic pains, which almost prevented me from going about. These symptoms left me in the summer, and returned in the winter, during three succeeding years. In the second winter, when their recurrence seemed to have arisen in consequence of catching cold, the rheumatic symptoms rendered me almost a cripple for three months ; nor were they mitigated by any medicine which I took. Exercise on horseback relieved them in a very great degree. I could not exercise on foot, for the plantar fasciæ were affected, as were my ankles, knees, elbows, and the muscles of my back. During the whole of this illness I had no appetite, yet I ate food when it was put on the table. The want of appetite excited no surprise, for I thought it was a natural consequence of general indisposition. At the end of three months, I one day felt sick at stomach for about an hour, but not to that degree as to induce vomiting ; and whilst this sensation continued, I had not the slightest rheumatic pain about me. I now resolved not to eat till my appetite returned, and even then I gratified it very sparingly, eating only vegetable food, and drinking only water. In one week my appetite became keen, my digestion easy, my stomach tranquil, and I was as free from rheumatism, (a disorder to which I never had been subject,) as at any period of my life. It is also sufficiently manifest how much uncomfortable feelings of the bowels affect the nervous system, and how immediately and completely the general disorder is relieved by an alvine evacuation.

affected organs. General nervous irritation may have preceded the disorder of the stomach and bowels, or may have been caused by it. The history will generally show, that the derangement of the digestive organs is secondary. When it arises from local irritation, it can be produced only through the medium of the sensorium. When it is idiopathic, it frequently originates in causes which affect the nervous system primarily; such as anxiety, too great exertion of mind or body, and impure air. Sedentary habits and irregularities of diet are causes which may be supposed to act locally on the digestive organs themselves. Nervous irritability and weakness are not perhaps susceptible of a direct cure by medicine; but the disorders of the digestive organs are more corrigible by medical remedies. In practice, these require our chief attention; and if their disorders be corrected, all nervous irritation frequently ceases, and health is restored. In many instances the nervous irritation which has induced the disease is trivial, and would soon cease, were it not kept up by the reaction of its effects.

Whether this disorder of the digestive organs be primary or secondary, it generally produces irritation in the brain; and thus may cause in many instances actual disease of that organ, as will be stated in the conclusion of this paper. But derangement of the digestive organs arises, in many cases, from established nervous disorder; indeed, there is often reason to suppose that it is dependent on, or connected with, actual disease of the brain. In such cases, the correction of the disordered function of the digestive organs cannot be accomplished; and even if it were practicable, it would not cure the nervous disease. It is however highly necessary and advantageous to attend to the disorder of the digestive organs, where it is only a symptom of nervous disease. The relief of the former will often mitigate, though it cannot cure the latter.*

* The ingenious Mr. John Bell has of late published an opinion that all nervous disorders depend on the circulation of blood in the brain. The opinion is founded on this dogma; the brain being insensible, there can be no such thing as

The connexion of local disease with general disorder has been often remarked ; it has been formerly attributed to impurity of the fluids ; a theory which is not irrational. Imperfect digestion must influence the qualities of the blood, and all parts of the body may be affected from this source. But in accounting for the reciprocal influence of disorders of the head and the digestive organs on each other, the modern explanation of these phenomena, by means of sympathies, is perhaps preferable. Afflicting intelligence will destroy the appetite and produce a white tongue in a healthy person ; and a blow on the stomach disorders the head. These phenomena take place independently of the blood, and can only be explained by admitting that disturbance of one organ immediately affects another.

The writings of the ancients abound with passages, in which local diseases are attributed to affections of the abdominal viscera, and the same fact has been noticed by several of the moderns. The French surgeons appear to be very solicitous to keep the bowels in a cool and tranquil state ; and Dessault ascribes the origin of erysipelas to a bilious cause. The German surgeons, Richter and Schmucker, attribute many local diseases to gastric affections ; and in Italy, Scarpa views the subject in the same light. The English practitioners seem to have been less attentive to this class of disorders ; insomuch that Fischer, a German, who published an account of the state of medicine in this country, expresses his surprise,

nervous irritation. Believing similar opinions to be prevalent in the profession, I think it worth inquiring, whether, if the motion of a worm in the stomach produces temporary blindness or convulsions, there be not some nervous irritation ? If a man has his leg amputated on account of a compound fracture, and afterward becomes delirious and dies ; I grant that fulness of the vessels of the head will be found on dissection ; but was not the vascular action caused by preceding nervous irritation ? The same fulness of vessels and signs of inflammation are found in those who die of fevers ; but do not the miasmata which cause them affect the brain, and suddenly impair and disturb its energy, and is not then the vascular action a consequence ? I would ask too, practically, does blood-letting cure disorders in which there is a fulness of the vessels of the head ? It must be granted, that in many instances it temporarily alleviates them, but in others it fails to relieve, and even aggravates them.

that the English should be so little acquainted with gastric diseases. I know not exactly what ideas these gentlemen may annex to the terms gastric and bilious disorders, since they do not particularly describe them. I have represented the subject in the foregoing pages, as it has appeared to me on the most attentive examination.

There is also an excellent dissertation, in which the effects and treatment of disorders of the digestive organs are particularly described, inserted in the eighth volume of the *Mémoires de la Société Royale de Médecine*, of Paris, for the year 1806, at page 310, entitled *Reflections sur le Traitement de la Manie atrabilaire comparé a celui de plusieurs autres Maladies chroniques, et sur les Avantages de la Methode evacuante*, par M. Hallé. After describing the discharges from the bowels in atrabiliary mania, he observes, that a similar state of those organs is found in other diseases, namely, dropsy, hypochondriasis, accompanied with difficulty of breathing and palpitation, obstinate coughs, and a great number of very different diseases; to all of which the same treatment is applicable. That the extremely prejudicial consequences of disorders of the stomach and bowels have been noticed at all times by persons of observation, and particularly by those who are in the habit of judging of their state by their excretions, is sufficiently evident. The ancients sought to correct the error by purging with hellebore, and the moderns by more compound purges, to use the words of M. Hallé, *par le mélange de purgatifs résineux et des mercuriaux*. I have not, however, met with any physiological investigation of the nature of these diseases, nor of the rational objects of cure. It is to promote such an investigation, that I have laid before the public the facts which have come under my observation, and the reflections to which they have given rise.

In investigating the connexion between local diseases and disorder of the health in general, I can perceive, that failure in the functions and irritation of the digestive organs may act prejudicially on the system in general in various ways.

They may produce weakness, for strength and vigour seem to arise from the conversion of our food into perfect blood. They may produce an impure state of that fluid, and they may produce great irritation of the brain, and thus influence the whole body. However, what I have to observe respecting the causes and cure of local diseases, will be most properly introduced and best understood after the cases have been recorded, upon which the opinions have been founded.

The result of all these observations, which I have been able to make, relative to this subject, has induced me to believe that the disorder of the digestive organs, caused by the various circumstances which have been recited, consists in a weakness and irritability of the affected parts, accompanied by a deficiency or depravity of the fluids secreted by them, and upon the healthy qualities of which the due performance of their functions seems to depend. This opinion is deduced immediately from the consideration of the symptoms, and confirmed by all the collateral evidence, which we can collect. The duration of the affection, without fatal consequences, shows that it is a disorder of functions, and not a disease of structure. Dissections confirm the opinion. Blows which excite general irritation of the digestive organs, produce also the symptoms which characterize the like disorder, when it arises from nervous irritation, or is excited by intemperance. I doubt not but every one will, on reflection, consider the disorders of the digestive organs to be of the first importance, and will perceive the propriety of diligently inquiring into their nature, that we may know them when they exist, and that our attempts to remedy them may be conducted on rational principles. This consideration will, I trust, vindicate me for employing so much time in an investigation which, perhaps, some may consider as tedious and unprofitable.

Occasional Effects of Disorder of the digestive Organs.

It is generally admitted, that disorders of the chylopoietic viscera will affect the source of sensation, and consequently the whole body ; but the variety of diseases, which may result from this cause, has not been duly considered.

It may produce in the nervous system a diminution of the functions of the brain, even so as to occasion apoplexy and hemiplegia, or a state of excitation, causing delirium ; partial nervous inactivity and insensibility, or the opposite state of irritation and pain. It may produce in the muscular system weakness, tremors, and palsy ; or the contrary affections of spasm and convulsions. It may excite fever by disturbing the actions of the sanguiferous system ; and cause various local diseases by the nervous irritation which it produces, and by the weakness which is consequent on nervous disorder or imperfect chylicification.* Or if local diseases occur in a constitution deranged in the manner which I have described, they will become peculiar in their nature and progress, and difficult of cure. Affections of all those parts which have a continuity of surface with the stomach ; as the throat, mouth, lips, skin, eyes, nose, and ears, may be caused or aggravated by this complaint. I must observe, before I proceed to the relation of cases, that such a disorder of the digestive organs as I have described existed in every instance. I do not take upon myself to say that it was the primary cause of the general derangement of the constitution, with which the local disease appeared to be connected ; it might have been the consequence, as indeed has been stated in these preliminary observations.

* The liability of parts to become diseased in consequence of general disorder, will probably be in proportion to their weakness, susceptibility, or complication of structure and function. We know that bones, ligaments, and glands, are very liable to be thus affected ; and in the Third Lecture at the College, I

Treatment.

I shall now proceed to mention the plan which I have pursued in the treatment of disorders of the digestive organs, when they have been connected with surgical diseases; and with what degree of success, the following cases will demonstrate. I do not feel altogether competent to give full directions relative to this subject; because I have never attended to medical cases with that degree of observation which would lead me properly to appreciate the efficacy of different medicines, when administered either in their simple or compound forms. The subject is so important, that the public would be highly indebted to any practitioner, who would point out the varieties of these diseases, and the appropriate modes of cure. The method of treatment which I have adopted, is simple, and founded on the opinions I have formed of the nature of the disease, and on physiological views of the functions of the affected organs. Believing the disordered parts to be in a state of weakness and of irritability, my object has been to diminish the former and allay the latter. Believing also that the secretions into the stomach and bowels, upon the healthy state of which the due performance of their functions depends, were, in consequence of such disorder, either deficient in quantity or depraved in quality, I have endeavoured to excite, by means of medicine, more copious or healthy secretions.

It is a principal object of medicine to give strength and tranquillity to the system at large, which must have a beneficial influence on all its parts, and greatly promote the well-doing of every local disease. We cannot reasonably expect tranquillity of the nervous system whilst there is disorder of the digestive organs. As we can perceive no perma-

have endeavoured to show how dissimilar, or much diversified, diseases may result from the same general causes. Page 121.

ment source of strength but from the digestion of our food, it becomes important on this account that we should attend to its quantity, quality, and the periods of taking it, with a view to ensure its perfect digestion.

First, With respect to quantity : There can be no advantage in putting more food into the stomach than it is competent to digest, for the surplus can never afford nourishment to the body ; on the contrary, it will be productive of various evils. Being in a warm and moist place, the undigested food will undergo those chymical changes natural to dead vegetable and animal matter ; the vegetable food will ferment and become acid, the animal will grow rancid and putrid ; this is only rendered evident occasionally, when a disordered stomach rejects some of its contents ; then the teeth are roughened and set on edge by the corrosive qualities of the acid, and the throat feels burnt by the acrimony of the rancid oil. These effects, though occasionally made apparent, must constantly take place, unless by the digestive powers of the stomach the food is converted into a new substance which is not liable to these chymical changes. Such new and irritating compounds may not indeed materially injure a healthy stomach, but cannot fail to be detrimental to one that is weak and irritable, as well as to the whole tract of the alimentary canal, and thus maintain and aggravate its disorder. Part of the food thus changed will be imbibed from the bowels, and render the blood impure, from which there is no outlet for various kinds of matter but through the kidneys ; and this may prove a cause of foul urine, as well as of the presence of many substances in that fluid not natural to it, and be productive of serious diseases in the urinary organs. Observing the evils resulting from undigested aliment, we surely ought cautiously to guard against them by proportioning the quantity of our food to the digestive powers. Nature seems to have formed animals to live and enjoy health upon a scanty and precarious supply of food ; but man in civilized society, having food always at command, and finding gratification from its taste, and a temporary hilarity and energy re-

sult from the excitement of his stomach, which he can at pleasure produce, eats and drinks an enormous deal more than is necessary for his wants or welfare ; he fills his stomach and bowels with food which actually putrifies in those organs ; he fills also his blood-vessels till he oppresses them, and induces diseases in them as well as in his heart. If his digestion be imperfect, he fills them with unassimilated substances, from which nutriment cannot be drawn, and which must be injurious. In proportion as the powers of the stomach are weak, so ought we to diminish the quantity of our food, and take care that it should be as nutritive and easy of digestion as possible. By adopting an abstinent plan of diet, with respect to the quantity of our food, even to a degree that produces a sensation of want in the system, we do that which is most likely to create appetite and increase the powers of digestion. In how great a degree want effects these objects, is evident in those who have been obliged to fast from necessity, or have been much reduced by hæmorrhage.

Secondly, As to quality : It is not my intention to discuss the question as to the nature of the food proper for mankind. When the stomach is weak, it seems particularly necessary that it should be nutritive and easy of digestion. I may further observe, that its qualities should be adapted to the feelings of the stomach. In proof of this proposition, numerous instances might be mentioned of apparently unfit substances agreeing with the stomach, being digested and even quieting an irritable state of stomach, merely because they were suitable to its feelings. Instances might also be mentioned of changes in diet producing a tranquil and healthy state of stomach in cases where medicines had been tried in vain. Neither can such occurrences excite surprise ; for as digestion and the consequent tranquillity of the stomach depends on a proper quantity of healthy juices being secreted and commixed with the food, such secretions are likely to be produced by whatever agreeably excites it, and obstructed by whatever has a contrary tendency.

Thirdly, As to the times of taking food : It is evidently the intention of nature that we should put into the stomach a certain portion of food, the excitement of which inducing a secretion of gastric fluid, by its action becomes digested. This office of the stomach being effected, it should be left in a state of repose till its powers are restored and accumulated, and this return of energy would in health be denoted by a return of appetite. It is probable that three hours may elapse in health before the digestion of a moderate meal is effected, so that the stomach is empty and in a state of repose. It is therefore reasonable to allot the same portion of time for the same purpose when the organ is disordered, whilst we have diminished the quantity of our food in order to proportion it to the diminished powers of the organ ; yet instead of pursuing this rational plan of diet, many persons are taking food every third or fourth hour, pleading in excuse for such conduct that they cannot do without it. The truth is, that when the stomach is disordered, the exertion of digesting a single meal after its excitement and efforts have ceased, is productive of sensations of languor, sinking, and inquietude, which ought to be calmed or counteracted by medicines and not by food, for a second meal cannot be digested in this state of the stomach. We also often tease and disorder our stomachs by fasting for too long a period ; and when we have thus brought on what I may call a discontented state of the organ, unfitting it for its office, we sit to a meal, and fill it to its utmost, regardless of its powers or its feelings. The rules, then, for diet may be thus summarily expressed. We should proportion the quantity of food to the powers of the stomach, adapt its quality to the feelings of the organ, and take it at regular intervals of six or seven hours thrice during the day. It would be well if the public would follow the advice of Mr. Addison, given in the Spectator, of reading the writings of L. Cornaro, who having naturally a weak constitution, which he seemed to have ruined by intemperance, so that he was expected to die at the age of thirty-five, did at that period adopt a strict regimen, allowing himself

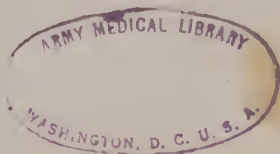
only twelve ounces of food daily.* By this plan of diet he lived to more than one hundred years; and it is delightful to observe the tranquil, cheerful, and energetic state of mind accompanying his bodily health, and in a great degree induced by it. Cornaro found that as the powers of his stomach declined with the powers of life in general, it was necessary he should diminish the quantity of his food, and by so doing he retained to the last the feelings of health.

Every thing which we take into the stomach, except food, may be considered in two points of view; either as a diluent or a medicine. Water is the only diluent, and we are in the habit of mixing alimentary matter and stimulants with it. Diluents probably ought not to be taken during or immediately after our meals, since they would be likely to render the juices of the stomach less efficacious in the digestion of our food. Hunger and thirst seem to be incompatible sensations: a hungry animal would eat to satiety, and the stimulus of the food would bring on a discharge of the juices of the stomach, which have the power of digesting the food; nor is it probable that the sensation of thirst would be experienced till this operation of the stomach is effected. If the sensation of thirst then occurred, water would appease it, without frustrating the digestive functions, and being absorbed from the alimentary canal, a certain portion of it would be furnished to the blood, and the surplus would pass off from

* I could relate many instances of persons who were much emaciated, some of whom were of considerable stature, becoming muscular and fat upon four ounces of the most nourishing and easily digestible food, taken three times a day. A patient lately gave me the following account of his own proceeding, with respect to diet. He said, When thou toldest me to weigh my food, I did not tell thee that I was in the habit of weighing myself, and that I had lost 14 lbs. weight per month, for many months before I saw thee. By following thine advice I have got rid of what thou didst consider as a very formidable local malady; and, upon thy allowance of food, I have regained my flesh, and feel as competent to exertion as formerly, though I am not indeed so fat as I used to be. I own to thee, that as I got better, I thought thy allowance was very scanty, and being strongly tempted to take more food, I did so; but I continued in the practice of weighing myself, and found that I regularly lost weight upon an increased quantity of food; wherefore I returned to that which was prescribed to me.

VOL. I.

7



the skin, lungs, and kidneys. Animals also rest during the digestion of their food, and drink when this is accomplished; and it would be right for patients to imitate this example. How much exertion of body or mind is capable of impeding digestion, is shown in the fourth lecture at the College. Diluents being requisite, and in many cases particularly useful, toast and water, mint and balm tea, light ginger tea, (when the stomach requires a stimulus,) marsh mallow, and linseed tea, (when mucilage is likely to be useful,) China tea, (when it agrees with the stomach,) may be drank three or more hours after each meal during the night, or early in the morning; for we should take diluents at such times as not to let fluids be in the stomach when the food is received, nor during its digestion. By drinking at proper times thirst will be prevented at improper ones, and we shall have no temptation to fill the stomach with liquids when we have taken our food; thus setting it afloat, and diluting the juices of the stomach, upon the agency of which its digestion entirely depends.

All stimulants must be regarded as medicines; vinous liquors are of this class, and being suitable to the feelings of the stomach, are in many cases very useful, yet they are very liable quickly to pass into a state of acetous fermentation, and to promote that change in the vegetable food contained in a disordered stomach, and thus produce a strong and injurious acid. The rule for taking vinous liquors in persons to whom habit has rendered them necessary, may be thus briefly stated. They should not take them during their meals, lest the temporary excitement they produce should induce them to take more food than the powers of the stomach are capable of digesting, but afterward they may be allowed so much of them as may be required to induce agreeable feelings, or to express the fact more clearly, as is necessary to prevent those uncomfortable sensations which the want of them may occasion; and it may be added, the less they take the better. People deceive themselves on this point. A disordered stomach will feel uncomfortable after eating; fermented liquors remove for a time the unpleasant sensations. Potion after

potion is swallowed on this account, often without producing permanent tranquillity, and much to the injury of the stomach. Wine-drinkers do not drink wine after every meal, which proves that wine is not necessary to their digestion; and many who confided in this belief have been convinced of their error, by leaving it off, and finding that they digested their food as well when deprived of it, and that such privation greatly contributed to their eventual restoration to health. When stimulants seem requisite, and fermented liquors run into the acetous fermentation in the stomach, spicy and aromatic vegetables should be substituted, such as ginger, pepper, mustard, &c.

Stomachic medicines are given to strengthen a weak stomach, to tranquillize an irritable one, or to counteract some morbid peculiarity in the feelings and actions of that organ. There is a time when stomachic medicines seem to be particularly required. About three hours after a meal, when the stomach is exhausted by the labour of digestion, when its morbid propensities are increased by the languor consequent to fatigue; at this period, when persons are in the habit, through ignorance of taking food to appease their distress, they ought, as has been said, to take these kinds of medicines.

Even our food must however be considered as exerting a medicinal influence in disorders of the stomach. When that organ is irritable, a vegetable diet and abstinence from fermented liquors may tend to tranquillize it. On the contrary, when it is weak as well as irritable, that aliment which is most readily digested is to be preferred, and cordials are sometimes beneficial. The effects of food and medicine can never be considered as resulting from their operation on the stomach solely, but from their conjoint influence upon it and the nervous system in general. Irritability of the stomach may arise from that of the brain, and unstimulating diet may tend to tranquillize the latter organ, and thereby alleviate the disorder of the former. On the contrary, a more generous diet may, by exciting the nervous system, produce that degree of energy in its actions, which invigorates the stomach, and tranquillizes its disorder. It may further be observed in some

cases, that the kind of medicines or diet which is serviceable to the stomach, may aggravate the nervous disorder; and on the contrary, that those means which seem to tranquillize nervous irritation tend to diminish the powers of the stomach.

Vegetable diet-drinks appear to me very useful in tranquillizing and correcting disorders of the stomach and bowels, for this is the manner in which they seem to be efficacious in the cure of local diseases. The vegetables prescribed in the different formulæ are so dissimilar, that we can scarcely suppose that they act specifically upon the local disease. Even sweet-wort has obtained considerable celebrity. When diet-drinks fail to correct the disorders of the digestive organs, they also fail to produce any amendment on local diseases. Such observations have induced me to believe that they have the utility, which I have ascribed to them, of tranquillizing and correcting disorders of the stomach and bowels. It is allowable to form an opinion from such observations, though I am sensible of their invalidity as arguments to prove its truth.

Whilst thus, on the one hand, by endeavouring exactly to proportion the quantity of food to the powers of digestion, by adopting an abstinent system of diet, and taking medicines suitable to the condition of the stomach, we endeavour to foster the powers and ensure the tranquillity of this important organ, we ought on the other most carefully to attend to the regulation of the action of the bowels with a view to ensure their tranquillity, for we cannot expect that the stomach will be tranquil if the bowels be otherwise. To produce tranquillity of the bowels when they are in a disordered state, it is necessary that the residue of the food be daily carried down and discharged from those organs; this is their natural function, and if they fail in its performance, they should be excited by appropriate medicines, yet without teasing them so as to induce what is ordinarily called purging. Purging, occurring spontaneously, shows that the bowels are irritable, and the aqueous and other discharges which take place from them in that condition often relieves their irritability. When purging occurs in consequence of taking medicine, it shows

that the bowels have been irritated, and have relieved themselves in their usual manner. Persons may be purged without having their bowels cleared of the *fæcal* matter which may be detained in them; we should therefore endeavour to ascertain what kind or combination of purgative medicines will excite a healthy action of the bowels, without teasing them or producing discharges from the organs themselves. The best mode of proportioning the degree of excitement to the end designed is to take a dose of a suitable medicine at night, but short of that which may prove irritating; if it fails sufficiently to excite the organs, a similar dose may be taken in the morning; which also failing, it may be repeated at regular intervals during the day. The principle that should govern our conduct in the administration of purgatives, may be briefly stated, the excitement is to be repeated till the requisite action is induced, yet no single excitement being such as may prove an irritant to the organs.

Purging medicines sometimes relieve unpleasant sensations; but they do not in general produce even this effect; and all active purges seem to me to increase disorder. It is natural to suppose that strong stimuli will aggravate the unhealthy condition of weak and irritable parts.

I have already expressed my opinion of the manner in which the continuance of purgative medicines, in such doses as do not immediately purge, relieve disorders of the digestive organs, by producing morbid secretions which afford considerable relief, both when they occur spontaneously or are thus induced. This plan of practice is what Dr. Hamilton has suggested, and the utility of which he has so successfully elucidated. I am aware that laxative medicines may relieve irritation merely by augmenting the natural secretions of the viscera, and thus unloading their vessels; and also by determining the fluids from the head, when the nervous symptoms are aggravated by a plenitude of the vessels of the brain. As I have found the lenient plan of treatment (that of exciting the peristaltic action of the bowels, so as to induce them to clear out the whole of their contents, without irritating them, so as to produce what is ordinarily called

purging) particularly successful, I have rarely deviated from it. I am not, therefore, warranted from experience in speaking decisively respecting the more free use of purgative medicines.

It is difficult, in many cases, to regulate the actions of the bowels either by diet or medicine. They are costive for a time, and then fits of purging come on. The former state must be obviated in order to prevent the latter. Medicines which excite a healthy action of the bowels in one person, are either inert or too active in another. Doses, which would have no effect in a state of health, become purgative in this disorder; a circumstance which shows that the bowels are irritable. There are also instances of the contrary, in which it is exceedingly difficult to excite the actions and secretions of these viscera.

At the same time, I have not been inattentive to the error in the biliary secretions which exists in the greater number of these cases. I have endeavoured to correct this error by the administration of such small doses of mercury, as do not irritate the bowels, and are not likely to affect the constitution, even though persevered in for a considerable time. In this state of the digestive organs, calomel, in small quantities, sometimes proves irritating. I have combined it as in Plummer's pill, and given one grain every second night. Where this dose produced uneasy sensations, or acted as an aperient, five grains of the pil. hydrarg. were substituted in its place; and even this quantity has been diminished in some cases. When the bowels are very irritable, the hydrarg. c̄ cretâ has been given.* When it appeared necessary, on account of the biliary secretion, and when the calomel did not irritate the bowels, I have increased the dose. The relief, which arises from the increase or correction of the biliary secretion, in a great number of these cases, shows how much the liver is concerned in causing or aggravating the symptoms in these diseases.

* I have mentioned in the second part of these observations, that the pilul. hydrarg. are very uncertain in their effects.

There are numerous and undoubted proofs of the utility of Mercury, in correcting and augmenting the biliary secretion ; but the mode of administering it has not, perhaps, been sufficiently attended to. I have known patients, who had voided nothing but blackish stools for some months, discharge *fæces* of a light yellow colour, denoting a healthy, but deficient secretion of bile, immediately upon taking such small doses of mercury. The effect of this change on the constitution and spirits has been surprisingly great ; though the state of the stomach did not appear to be altered. The use of mercury by inunction sometimes acts beneficially in correcting the biliary secretion ; but if the constitution be irritated and weakened by that medicine, the actions of the liver and of the digestive organs in general become disordered. Mercury, in my opinion, acts most certainly and efficaciously, when taken into the bowels, and a much smaller quantity will suffice, when its application is in this manner rendered chiefly local.

Facts are wanting to enable us to ascertain whether mercury meliorates and augments the secretion of the other digestive organs, as it does that of the liver. The stomach frequently appears worse during its employment, whilst the stools are considerably better ; I have in such cases, discontinued the medicine, and returned to it again if the state of the liver made it necessary. When benefit is obtained from a small quantity of medicine, we naturally expect an increased advantage from an augmented dose ; this is so natural an error, that an admonition against it appears necessary. I have observed in some instances, where small doses of mercury have unexpectedly affected the mouth, that considerable benefit seemed to arise from this circumstance. Yet it is wrong, in general, to augment the dose of the medicine, so as to create even local irritation in the bowels by it. The various effects of mercury in disorders of the digestive organs cannot, I think, be understood, but by considering, not merely its local operation on these organs, but also its action on the constitution at large. When we see the biliary secre-

tion corrected by a few grains of the pilul. hydrarg. as in the second case, we cannot but believe its action to be local. When the medicine is given in larger doses, it exerts an influence on the whole constitution, and alters the state of the nervous system. It thus controls diseases dependent on an irritable and disturbed state of the nervous functions : this I think I shall be able to show by cases related in that part of this book which treats on diseases induced by the absorption of morbid animal poisons ; and thus mercury may relieve disorders of the digestive organs by relieving the nervous disorder which caused them. But when mercury is given in still larger doses, as it is for the cure of syphilis, it never fails to irritate and weaken the constitution, and thus to disorder the digestive organs. Persons who are salivated have, as far as I have remarked, the functions of the liver and digestive organs constantly disturbed by that process. I cannot, therefore, but think that it is wrong to use mercury in hepatic affections to that extent, which would disorder the functions of the liver, if they were previously healthy. In the majority of cases, the disorder has existed for a long time, and has become habitual ; therefore it is not likely to be cured suddenly. For this reason, we should adapt our treatment to the more rational expectation of effecting a gradual recovery than a sudden cure. I have also known many cases where the liberal use of mercury has completely failed, in which the functions of the liver were even in a short space of time restored by alterative doses of that medicine. It seems to me that it is by the persevering use of innocent excitement that this object is soonest accomplished. The most judicious treatment will not remedy the disease if the exciting causes continue to operate ; such as improprieties of diet, agitation of mind, sedentary habits, or impure air.

Although experience has made me think very highly of the efficacy of small doses of mercury, in exciting and correcting the biliary secretion ; yet it ought to be mentioned, that in some few cases this medicine fails to produce its

usual effects, and that the biliary secretion becomes healthy without its administration. Nor is this surprising, for in general disorders of the digestive organs, one organ is more disordered than the rest, and appears to have been the cause of the whole affection. Thus the liver may disturb the functions of the stomach and bowels, or it may be disturbed by them. When the liver is disturbed by the stomach its function will become right without mercury, upon the stomach regaining tranquillity and health.

The following cases will afford sufficient testimony of the efficacy of such simple treatment as I have recommended, and which appears to be well adapted to gradually restoring the healthy actions of the digestive organs in cases of chronic disorder and disease. The treatment must be considered very deficient, as a general account of what can be effected by medicine. In acute disorders of the digestive organs, we know that nauseating medicines, by exciting the secretions, often relieve stomachic irritation, and that emetics and other remedies which suddenly and powerfully affect the stomach, produce great changes in the state of that organ and of the nervous system, as well as corresponding alterations in local diseases. In some inveterate cases, apparently depending on established nervous disorder, this simple treatment has been ineffectual. Under such circumstances, the nervous affection appears to require the principal attention.

In investigating the treatment of these disorders, it is necessary to ascertain, not only what medicine is beneficial, but also what change it produces in the circumstances of the disorder. The administration of a medicine may in one case be succeeded by a discharge of bile, and a striking relief from long-continued and distressful feelings; yet the same medicine may be given in many other instances, without the same consequence. Was the change, then, in this instance accidental? or must it be attributed to some unnoticed peculiarity in the disease or constitution?

I have generally explained to the patients the objects which I had in view, in correcting disorders of the digestive organs,

by saying that there are three things which I consider as right and necessary to the cure of disorder. First, that the stomach should thoroughly digest all the food that is put into it. The patient perceiving the necessity of obtaining this end, becomes attentive to his diet, and observes the effect which the quantity and quality of his food and medicines have upon his feelings, and the apparent powers of his stomach. Secondly, that the residue of the food should be daily discharged from the bowels : here, too, the patient, apprised of the design, notes what kind and dose of purgative medicine best effect the intention ; and whether it answers better if taken at once, or at intervals. Thirdly, that the secretion of bile should be right, both with respect to quantity and quality. In cases wherein the secretion of bile has been for a long time deficient or faulty, I recommend, as I have said, unirritating and undeblilitating doses of mercury to be taken every second or third night, till the stools become of the wet rhubarb colour ; that is, of a deep brown formed by the intensity of the yellow colour. This mode of exhibiting the medicine has at least the advantage of being innocent, and if months elapse before the object is accomplished, we cannot wonder at the tardiness of the cure, when we consider the probable duration of the disorder, prior to our attempts to correct it. The patient is relieved in proportion as the end is accomplished, which feelingly induces him to persevere in such innocent measures. By thus engaging the co-operation of the patient, the practitioner will, in my opinion, derive considerable advantage in the treatment of the case.

Whenever circumstances would permit, I have recommended the patients to take as much exercise as they could, short of producing fatigue : to live much in the open air ; and if possible, not to suffer their minds to be agitated by anxiety or fatigued by exertion. The advantages of exercise in nervous disorders, upon which those of the digestive organs in general so greatly depend, appear to me very striking. It were to be wished that we had some index to denote the strength and irritability of the nervous system, serving as the pulse

does with regard to the sanguiferous organs. Perhaps the strength, agility, and indefatigability of the muscles may be regarded as the surest evidence of energy of nervous power and bodily vigour. If this were granted, however, it would follow that many persons, possessing great nervous power, have nevertheless great nervous irritability. Many people who are extremely irritable and hypochondriacal, and are constantly obliged to take medicines to regulate their bowels whilst they live an inactive life, no longer suffer from nervous irritation, or require aperient medicines, when they use exercise to a degree that would be excessive in ordinary constitutions. The inference which I draw from cases of this description is, that nervous tranquillity is restored in consequence of the superfluous energy being exhausted by its proper channels, the muscles. When, on the contrary, the nervous system is weak and irritable, exercise seems equally beneficial; but caution is here requisite as to the degree in which it should be taken. A weak and irritable patient may not be able to walk more than half a mile without nearly fainting with fatigue on the first day of the experiment; but by persevering in the effort, he will be able to undergo considerable muscular exertion without weariness. Does not this imply a considerable increase of bodily strength, and is not the acquisition of strength the chief desideratum in the cure of many disorders? The nervous irritability, also, when dependent on weakness alone, will proportionably diminish with its cause. In the latter case, the nervous energy seems to be augmented in consequence of our increasing the demand for it. I am induced to make these observations, from a belief that exercise is not employed as a medical agent, to the extent that its efficacy seems to deserve; of its medical effects I entertain a high opinion; it is however right to direct patients with regard to its use, not to exert themselves for some time previous to a meal, nor for three hours after. I would prescribe to my patients the following rules: They should rise early when their powers have been refreshed by sleep, and actively exercise themselves in the open air, till they felt a

slight degree of fatigue: they should rest one hour, then breakfast, and rest three hours, in order that the energies of the constitution should be concentrated in the work of digestion; then take active exercise again for two hours, rest one, then taking their dinner they should rest for three hours, exercise two, rest one, and take their third slight meal. I do not allow the state of the weather to be urged as an objection to the prosecution of measures so essential to health, since it is in the power of every one to protect themselves from cold by clothing, and the exercise may be taken in a chamber with the windows thrown open, by walking actively backwards and forwards as sailors do on ship-board. I also caution patients against sleeping too much; waking from sleep indicates that the bodily powers are refreshed; many persons upon first waking, feel alert and disposed to rise, when upon taking a second sleep they become lethargic, can scarcely be awakened, and feel oppressed and indisposed to exertion for some time after they have risen. When the disorders which have been the subject of this paper, have been long continued, they do not admit of a speedy cure; hence attention to diet, air, exercise, and mental tranquillity, are more decidedly beneficial than medicines. Surgeons in London meet with frequent and convincing instances of the efficacy of pure air. Patients under the irritation of a local disease, who scarcely eat or sleep in town, recover their appetite, digestion, and sleep, so suddenly on their removal into the country, as to leave no room for doubting, that the change of air has produced this beneficial alteration in their health. The whole of the plan of treatment which is here recommended is so simple and apparently so inefficient, that its power might reasonably be doubted, did not facts attest its utility. I should not have thought it right to have thus related it in detail, but for the purpose of avoiding repetition in the recital of the cases which are to follow; and also because it seemed right to state as explicitly as possible to the younger part of the profession what are the curative intentions in disorders of this nature.*

* After I had written the above account of the treatment which I had found

CASES.

SECTION I.

On Nervous and Muscular Disorders.

LONG before my attention was excited to disorders of the digestive organs, I had remarked that there was a paralytic affection of the lower extremities, resembling that which is produced by a disorder of the medulla spinalis, in consequence of disease of the bodies of the vertebræ. This paralytic affection also appeared to me to vary with the state of the patient's health.

These observations led me to propose a method of treatment, which proved successful in the cases of two young ladies, who were affected in this manner. The issues, which had been ineffectually kept open in the back, were healed; and the state of the health in general was amended by country air, exercise, attention to diet, and a few simple medicines. The use of the limbs returned in proportion as the health became established. Such were the observations which I had made relative to this subject, when I met with the following cases.

CASE IV.

A young lady, whose stomach and bowels were disordered in the manner already described, became gradually affected

the most successful in the correction of disordered states of the digestive organs, I was much gratified by the perusal of Dr. Hamilton's publication on the Effects of Purgative Medicines. I think there is a great coincidence in the mode of treatment which I have described, and that which is sanctioned by his more extensive experience. He prescribes purgative medicines to act as eccoprotics, to excite but not to stimulate the bowels; and he combines with them generally unirritating doses of mercury. Dr. Hamilton's plan of treating these diseases also accords very much with that of M. Halle, to whose Memoir I have referred the reader.

with weakness of the lower extremities, and pain in the loins. The pain became at length very severe, and was aggravated in a manner almost insupportable by the agitation of a carriage. This lady could scarcely walk, and gave a description of the state of her limbs, so exactly resembling that which is sometimes consequent to diseases of the vertebræ, that I thought it right to examine the spine. I struck with my finger the spinous process of each lumbar vertebra, and upon touching one in particular, the patient complained of great pain; but pressure on the contiguous vertebræ also caused much uneasiness. Under these circumstances I placed a blister on each side of the spine, and kept up a discharge from the surface by dressing it with savine cerate. These means, with rest, relieved her sufferings; but, as her health declined, she went into the country, where she soon became much better. The blisters were now suffered to heal, and she shortly afterward had recovered so much, as to take long rides on a rough-going horse. She returned from the country in good health, and was both muscular and fat. About a year afterward she was so ill, in the same way, that she wished to have issues made in the back: but I would not consent to this from knowing that the bone could not be diseased. Of this return of pain in the back, and weakness in the lower extremities, she again got well, upon amendment of her health in general. Since that period, she has been sometimes very well, at others pale and emaciated; and these changes have corresponded with the healthy or disordered state of her bowels. This lady, who was uncommonly healthy and strong, except when disturbed by disordered digestive organs, and who, when so circumstanced, had rheumatism, dysury, and other local maladies, which are in my opinion caused by such excitement, died about seventeen years afterward, very unexpectedly, of constipation, which could not be relieved by the most judicious treatment. The body was not examined, yet no doubt could be entertained of there having been mechanical obstruction; for just before her death a surprising extent of the bowels were protruded per anum.

CASE V.

I was consulted on the case of a young lady, who had been blistered severely for a pain at the bottom of her back, which was chiefly felt at the junction of the ilium and sacrum. It was supposed, that disease had taken place in the bone from some injury, and had affected the sacral nerves: she could not stand without support, so great was the weakness in the front of the thighs. There was no projection of the vertebræ. If the sacral nerves had been affected, the leg ought to have suffered the greatest share of pain and weakness; but that was not the case. She had no appetite; her tongue was greatly furred; her bowels costive; and pulse generally 110. I strongly objected to making issues in this case; but as the patient's sufferings increased, it was done. She went into the country, and died in four or five months. The bone was found, upon examination, to be perfectly healthy; but the mesenteric glands and lungs were diseased, and it was concluded that she died of consumption. I could not learn the state of the liver, nor do I know whether its appearances were particularly attended to.

CASE VI.

A young lady had been confined about six months to her chamber, on account of pain in the loins, and weakness of the lower extremities, which prevented her from standing or walking. The weakness of her limbs had been gradually increasing for a year and a half, before it became so bad as to make her incapable of moving about. Issues had been kept open during that time, on each side of the spine; but as the patient received no benefit, my opinion was asked respecting the seat of the disease of the bone; for it was concluded, that the issues had only failed from not having been made in the right place. I found, upon inquiry, that the chief seat of her pain was in the posterior edge of the liver.

Indeed, that viscus was enlarged, so as to be felt in the epigastric region, and was so tender as to cause much pain on being compressed, at any part, along the cartilages of the ribs. Her tongue was furred; her appetite deficient; digestion bad; bowels costive; and stools black, or else untinged with bile. I had no hesitation in advising, that the issues should be discontinued; and that attention should be chiefly directed to rectify the disorder of the chylopoietic viscera. Mild mercurials and aperients were given, by which, with other means, she got materially better in health, and was able to walk about as well as ever. The gentleman who attended this patient, met me accidentally, two months afterward, and informed me that she was quite well. I said, that as her disease had been a long time in forming, it could hardly be expected that she should recover so suddenly. He considered this expression as implying some doubt of his accuracy, and, therefore, sent the patient to me in the morning. She came from Lambeth, in a hackney coach, and looked very well; she observed, that long before her confinement, she could not have borne the agitation of a carriage; but that now, she did not feel it.* I have been informed, by several intelligent students, that similar cases have occurred in the hospital: as I was not a witness of these, I shall not relate them. I shall, however, mention one which I saw, and superintended myself, although it is, in some measure, imperfect, as the patient quitted the hospital suddenly, without our knowing where he went to.

* It can scarcely be doubted but that in this case the functions of the lumbar nerves were disturbed by disorder of the digestive organs; and I have seen many similar cases. In one which occurred lately, the circumference of the abdomen was benumbed so, that the patient said he knew not that he had any bowels. After his recovery to a certain extent, expressing his surprise and exultation at his amendment, he said, "Sir, I now know that I have bowels; and see, I can walk and stand as firmly as ever." But when I asked him to try if he could stand with his knees a little bent, he found that he was unable, for the muscles on the front of the thighs, which are altogether supplied from the lumbar nerves, had not regained their proper power.

CASE VII.

Thomas Crighton, aged twenty-three, was admitted into St. Bartholomew's Hospital, on account of a palsy of his limbs. About a year before, while the use of his limbs was yet unimpaired, he was attacked repeatedly with violent pains in the bowels; uniformly preceded by costiveness, and, generally, terminated by a copious discharge of loose, fetid, black stools. The relief afforded by the diarrhœa was speedy and uniform. In the course of six months his lower extremities became affected with occasional twitchings, and he found that he could not regulate their motions in walking; this increased to such a degree as to make him incapable of taking any exercise. He had, at the commencement of his illness, a confusion of vision; and a constant and violent pain in the head. The former symptom increased so much, that he could discern no object distinctly; a candle, for instance, although held near him, appeared as large as the moon. The sensation of his lower extremities continued perfect; but the actions of the bladder were no longer under the control of the will; the urine sometimes flowing involuntarily; and, at others, being retained for some hours, with considerable pain. He afterward began to lose the use of his upper extremities; the left hand and arm were more affected than the right; but there was no difference in the affection of the leg on the same side. His speech, also, became much impaired; he hesitated and faltered considerably, and the tones of his voice were irregular, so that at length he could scarcely make himself understood. At the time of his admission into the hospital, there was an entire loss of voluntary motion of the lower extremities, and a great diminution of that of the upper. The bowels were disordered; there was constant headach; the speech was very indistinct; and vision so imperfect, that he could not read the largest print. An issue was made in the neck, and some medicines were prescribed, under the direction of the

physician. As the treatment did not prove beneficial, I was desired to examine the spine, and found such a curviture and projection of the spinous processes of the upper lumbar and lower dorsal vertebræ, that I thought the bodies of those bones must be diseased. I was, therefore, inclined to attribute the paralysis of the lower extremities to this disease of the spine ; and consequently directed, that issues should be made on each side of the projecting vertebræ. As this supposition would not account for the paralytic affection of the parts above, and as the bowels were disordered, I ordered two grains of calomel with eight of rhubarb, to be taken twice a week, and some infusion of gentian with senna, occasionally. After using these medicines for about three weeks, his bowels became regular, the biliary secretion healthy, and his appetite good. He could move his hands and arms nearly as well as ever ; and his eyesight was so much improved that he could read a newspaper ; indeed, it was nearly well. The functions of the bladder were completely restored ;* his speech became articulate ; and his general health, in every respect, much improved. He remained in the hospital about two months, but with very little amendment in the state of the lower extremities, when his friends suddenly removed him, on account of some disagreement with the nurses, and I was unable to learn whither they had conveyed him.

The history of the preceding case was taken by Mr. Cruttwell, who practised afterward as a surgeon in Bath, who had been for several years a most industrious student at the hospital, and whose accurate observation and extensive information induce me to place entire confidence in any statement of a case which I receive from him. To that gentleman I am also indebted for the following particulars relating to a patient, who died some little time ago in the hospital, and

* I have seen several cases which induce me to believe that the weakness or irritation of the bladder, which occasions young persons to void their urine during sleep, very frequently arises from the same cause.

whose body was examined. The dissection serves still further to elucidate my present subject.

CASE VIII.

Elizabeth Griffin, twenty years of age, was admitted into St. Bartholomew's Hospital in August, 1805, on account of an inability to move her lower limbs, which was supposed to originate from a disease of the spine. On examination, however, there were no appearances which indicated caries of the vertebræ. Her voice was, at times, considerably affected; and she was subject to occasional attacks, resembling, in some degree, epileptic paroxysms. The affection of the limbs was liable to considerable variations. At times, as she assured me, she could walk across the ward with very little difficulty, at others she could not even stand without assistance. Her tongue was extremely, and I believe constantly white; her pulse natural. Her bowels were, generally, costive, and it was necessary to employ active medicines in order to procure stools, which were always of a dark colour. A slight temporary diarrhœa sometimes happened, and she invariably remarked, that the ease or difficulty with which she could walk, and the pain in her head with which she was troubled, were in exact conformity to the state of the bowels, all the symptoms being relieved by the diarrhœa, and returning as the bowels became again costive. There was an appearance of irritability and languor in the eye, which I have before observed in these cases, and the pupils were generally much dilated. After the patient had continued in the hospital about seven weeks, she was attacked with fever, and died. To this brief account of the symptoms, I now subjoin the dissection.

No diseased appearances were observed in the brain, though it was examined with the most particular attention: neither was there any disease of the vertebræ. No disease, in short, was observed except in the abdominal viscera. The chief morbid appearance, in them, consisted in an ulcerated

state of the villous coat of the ilium near to its termination in the cæcum. The ulcers were numerous, and situated where the mucous glands are chiefly found. The internal coat of the large intestines, also, appeared inflamed.

The liver was healthy in its structure. In the gall-bladder about one ounce and a half of a light green serous fluid was found, which had not in the least degree the soapy or mucilaginous feel of bile.

Cases, like those which have been related, are not, if I may judge from my own experience, at all uncommon. They sufficiently prove, in my opinion, that local nervous disorders and muscular debility may arise from a general disorder of the health, in which the digestive organs are chiefly affected. This disorder, as has been stated in the preliminary observations, may, sometimes, be the cause, and sometimes the consequence of the nervous affection. In either case, however, its correction is of high importance in the medical treatment of the disease. In the fifth and sixth cases, a disorder of the digestive organs must, I think, be allowed to be the cause of the nervous affection, from the sudden and complete cessation of the latter, when the cure of the former was accomplished. Decisive instances like these are particularly valuable; they show that great nervous disorder may be produced by that of the digestive organs, and consequently how much the latter disorder is likely to aggravate the former, when it occurs even secondarily as its effect. I have seen a considerable number of such cases, which I cannot relate with precision, because I had not sufficient opportunities of observing the patients, to enable me to note the progress of the disease with accuracy.

Of these I can only observe, in general terms, that I have seen several instances of pain, imbecility, and wasting of the muscles in one of the lower extremities, which were considered as the effect of disease about the hip-joint; yet the event proved that there was no organic affection of that part. The complaint was connected with that state of constitution which I have described, and was amended as the health in general improved. I have also seen several instances of

wasting of the muscles of one of the upper extremities in children ; so much indeed were the muscles shrunk, that the bones and joints could be as distinctly examined as in a skeleton. The local affection in these cases came on suddenly. I lately saw a little boy who had an attack of this kind in his left arm several years ago, and on whose case I was at that time consulted. The bowels had been violently disordered previous to the paralytic affection, and were, at the time I saw him, in an extremely unhealthy state ; I recommended that the chief attention should be paid to correct the disorder of these organs, and that the arm should be supported by a sling. The limb gradually recovered, and though it is not at present quite so large and strong as the other, yet the difference is so slight, that it would not attract the attention of a common observer. About six months ago I saw a little boy in very similar circumstances, and in his case, the arm quickly recovered its powers of motion, as the state of the digestive organs became healthy.*

I have also seen cases in children, in whom, after some general disorder of the health, accompanied by derangement of the stomach and bowels, an affection of the muscles of the extremities has taken place, like that which produces the varus and valgus ; I mean a predominance of the actions of some muscles over others, producing distortion of the limb. This has happened sometimes in one, sometimes in both the the lower extremities. I have also seen the muscles of the arm and hand similarly affected.

That the local symptoms in these cases, as well as in those which have been more fully detailed, arise from some remote nervous affection, and not from any local cause, acting on the nerves of the affected part. will, I believe, on due consideration, be granted. I suspect, however, that some persons may hesitate to admit such an opinion, from the belief that general

* I have, however, met with a considerable number of cases, in which a wasting of the muscles of the arm and scapula has been connected with a disease of the shoulder-joint.

disorder must operate generally, and not partially, on the nervous system. Perhaps the contemplation of the consequences of slight apoplectic effusions in the brain, may assist us in forming just notions on this subject. Such slight effusions of blood, occurring in various parts of the brain, have been known to paralyze one leg or one arm, or the muscles of the tongue, or of one half of the face, without affecting the rest of the nervous or muscular system.

Another opinion which I wish to be considered is, whether, when there is considerable and continued paralysis, there must necessarily exist some pressure or organic disease in the brain. That this exists in many instances is undoubted ; but the number of cases in which the paralytic affection is merely nervous, and independent of visible disease, is, in my opinion, very considerable. The instances which have been related, warrant this conclusion, and show such cases to be more frequent than is generally supposed. When there is organic disease of the brain, the case is very hopeless ; and probably no considerable alleviation of the symptoms will take place, by that attention to the state of the digestive organs which I have recommended. In dubious cases, and such, on the first examination of them, the majority of these instances will probably be, it seems right to try the effect of correcting disorder of the digestive organs, with a view to alleviate nervous irritation, before we proceed to those severer methods, which the belief of the existence of organic or vascular disease in the brain would induce us to institute. For if blood-letting and counter-irritation be employed, in order to diminish vascular action ; or if mercury be used to some extent in order to induce the absorption of deposited substance ; these measures must aggravate that disorder of the general health, upon which, in many instances, the nervous affection depends.

My object, in the recital of the foregoing cases, is to point out a cause of paralysis in particular muscles, which, from its locality, would, I suspect, be generally attributed to some local disorder of the nerves of the affected part, and therefore be treated erroneously. If my opinion of the nature of these

cases be correct, they can only be successfully treated by means which operate upon the constitution in general. I have particularly recommended that our efforts should be directed to correct any errors that may exist in the functions of the *primæ viæ*, for reasons that have been stated in the preliminary observations. Of the efficacy of such endeavours I have seen many more instances than I have brought forward : indeed the propriety of such attempts seems so obvious, that I doubt not but they will be made, and the effect of them will, by that means, be generally demonstrated. It is right, however, to mention, that in some cases to which I have attended, I have been foiled in my endeavours to correct, by the simple measures which I have related in the introductory remarks, the disorders of the digestive organs ; probably because their derangement depended on some established disease in the brain.

In other cases, when the functions of the digestive organs had been partially restored, the nervous and muscular affections were mitigated, but not cured. I have also met with one instance in which the bowels became moderately correct in their functions, without any evident amendment in the state of the limbs ; and I have known two instances of persons who were suddenly seized with paralysis of the lower extremities, apparently dependent on general nervous disorder, in which the digestive organs scarcely seemed affected.

In several of the cases which I have related, there were nervous pains in the affected limbs. That this symptom may arise from general nervous disorder seems to me very probable ; at least, I can affirm that I have known such pains cured by correcting the state of the digestive organs. In the cases of *tic douloureux*, which have fallen under my observation, the digestive organs have been greatly disordered ; and I have cured patients of the former malady by correcting the latter.*

* I insert the following case as a striking evidence of this fact. A gentleman who had suffered for fifteen years with violent *tic douloureux* in his face, became completely relieved in the course of a few weeks, by attention to diet, and the regulation of the functions of the digestive organs. He afterward

I wish, finally, to excite the attention of surgeons to the state of the bowels in tetanus. The occurrence of this disorder occasionally, when the wound which produced it is healing, seems to indicate that the effects; which have been produced by its irritation, continue. It has been, I think, fully shown, that local irritation may disorder the digestive organs; which disorder continuing, and aggravating the affection of the sensorium, may possibly lead to the production of tetanus, at a time when the wound is no longer irritable. In four cases of tetanus, in which I had an opportunity of inquiring into the state of the bowels, the evacuations from them were not like *fæces*. In investigating the cause of tetanus, I wish to propose, as a question, What is the state of the bowels between the infliction of the injury and the occurrence of that dreadful malady?*

evinced the degree of his amendment, and his exultation at his recovery, by telling me the following story. "When I returned home, I one day met," said he, "my doctor in the market-place, where I had just bought some good pears. I gave him half of them, and told him I would lay him a wager that I would eat my share first. The doctor," continued he, "was astonished, for he knew that I might as easily, (like Mutius Scævola) have put my right hand into the fire as a cold pear into my mouth during the last fifteen years." The relief, indeed, was not permanent, for the means by which it was procured were not persevered in.

* All the experience which I have had relative to the treatment of tetanus, since the first publication of these observations, has convinced me that more benefit is obtained by correcting the errors of the digestive organs than by any other means. It may probably be useful to insert one case as a striking proof of this fact. A man who had been wounded in the foot, but not badly, was brought, about ten days after the accident, to the admission-room of the hospital, and so violent and general were the spasms, that it was scarcely expected he could be taken to his bed alive. The jaw was fast clenched, and the muscles of his back and belly rigid. Convulsive actions came on frequently, and then all his limbs were violently affected. His bowels had not been relieved for many days. A grain of calomel and ten of jalap mixed with treacle, were given every fourth hour. It seemed also necessary to give him opium to mitigate his spasms, but it was mixed with an equal quantity of calomel. When, after twenty hours, his bowels were purged, the discharges were not like *fæces*, and so extremely offensive, that the patients could not stay in the ward. From this time, however, there was so complete a subsidence of the spasms that no more opium was necessary; and the patient recovered seemingly in proportion as the digestive organs regained their healthy functions.

Such cases as I have related in this section, with others that it would be foreign to my present purpose to mention, have impressed the opinion on my mind, that disorders of the digestive organs may originally cause, or may secondarily aggravate, a nervous disorder, and produce, as has been mentioned, "in the nervous system, a diminution of the functions of the brain; or a state of excitation causing delirium, partial nervous inactivity and insensibility; or the opposite state of irritation and pain: in the muscular system, weakness, tremors, and palsy; or the contrary affections of spasms and convulsions." Could these circumstances be proved, it would be scarcely necessary to add, that those painful affections of parts, to which perhaps some predisposition exists, may be excited in a similar manner: such as gout and rheumatism. Indeed rheumatic pains are very usually concomitant upon that state of constitution which existed in the patients whose cases I am relating.

No considerable progress could, however, be expected to be made in the study of the origin of sympathetic diseases, whilst the brain was regarded as the sole source or centre of the nervous energy. Now that the experiments of M. Le Gallois have extended our knowledge of the nervous system, and shown that the different portions of the medulla spinalis form also centres from which the nervous actions of corresponding parts of the body proceed, and to which they tend, considerable increase of knowledge is likely to result from attentive observation and accurate dissections. It is in my opinion sufficiently evident, that disorders of the digestive organs sometimes affect the different portions of the medulla spinalis, and produce sympathetic disorders of the body and limbs, without operating through the medium of the brain, as was formerly supposed. A female patient, about 27 years of age, was lately admitted into the hospital with paralysis of the arm, which had come on suddenly. She complained of much pain when pressure was made along the outer margin of the scalene muscles, where the nerves emerge that form the axillary plexus. Her digestive organs were greatly disordered, and in one week, by means that could only operate directly on those organs, she regained the use of her arm. A gentleman of the medical profession, whose digestive organs had been long disordered, suddenly lost the use of his right arm, without any apparent disturbance of the cerebrum. A professional friend asserting that the paralysis was a consequence of disorder of the chylipoietic viscera, the patient promised strictly to adhere to any plan of diet or course of medicine that his friend would prescribe. The only medicines ordered were pills, containing two grains of calomel at night, and moderate purges on the following morning, for one week. The bowels were cleared daily, but not materially disturbed. On the sixth day, however, several copious dark-coloured and offensive discharges took place, and the patient immediately regained the use of his arm.

CASES.

SECTION II.

On the Effects of Disorders of the digestive Organs attending Injuries of the Head.

I SHALL next speak of those cases in which local disorders of the head, produced by blows, are kept up and aggravated by affections of the digestive organs. After what has been observed respecting the reciprocal influence of the diseases of the brain, and of the chylopoietic viscera, it will readily be admitted, that an injury of the former may disturb the functions of the latter. Thus, concussion of the brain occasions vomiting as one of its immediate consequences, and will also be found to produce almost constantly, at a more remote period, that disturbance of the digestive organs which I have described in this paper. If the disturbance be only moderate in degree, but continued, it will often react upon the head, so as to occasion an irritable state of the injured parts, and impede their recovery.

In many cases of blows upon the head, a slow inflammatory affection continues in the parts chiefly injured, and ultimately produces destructive diseases. The bone sometimes becomes diseased, or an exostosis grows from its internal table; the dura mater becomes thickened, or matter slowly collects on its surface. Such local disorders produce others of a more general nature, and destroy the patient. These occurrences are, however, in my opinion, rare in comparison with the cases first described; in which a painful state of the injured parts is kept up by means of disorder existing in the digestive organs. The necessity for an accurate discrimination between these disorders, must strike us on the most superficial view of the subject: for the lowering treatment

which is necessary in the first and rarer case, would be detrimental in the second and more frequent one. By attending to the state of the digestive organs in these dubious cases, we may be enabled to form a probable opinion of the nature of the local complaint; for if there be nothing wrong in the general health to excite or maintain it, we may reasonably conclude that it was merely local; on the other hand, the inefficacy of evacuations in curing the local disease would naturally suggest the opinion, that it proceeds from irritation, and is dependent on a disorder of the health in general. It should be further observed, that when the local disease is of an inflammatory nature, and likely to induce morbid alterations in the structure of the affected parts, still it may be maintained and aggravated by disorder of the digestive organs. I have very frequently seen patients suffer so severely as to warrant a suspicion, that local disease of the most formidable nature existed; in these the usual methods of treatment were ineffectual; and they recovered suddenly or slowly, in proportion as the state of the digestive organs was corrected. I shall relate some examples of the disease under consideration, which will enable the reader to identify the case, when it occurs in practice.

CASE IX.

A young gentleman, about ten years of age, fell out of a window, six feet high, and struck the back part of his head against some stones. He was stunned by the blow, but perfectly recovered from the effects of the accident by bleeding, purging, and a low diet. He caught the scarlet fever about six weeks afterward and recovered from that also. But, whilst he was convalescent, the pains returned in that part of the head which had been struck with so much violence, as to induce the belief that some serious local mischief would ensue. After they had continued without abatement for a few days, I was desired to see him. He was lying in bed, and could scarcely be prevailed on to lift

his head from the pillow. The integuments of the occiput were so tender, that he would hardly allow me to examine the part; I ascertained, however, that there was no fluid under the scalp, nor any inequality in the bone. He dozed a good deal, and lay in a comatose state, but was occasionally restless. His pulse was very frequent, his skin hot and dry, and his tongue covered with a thick yellow fur. He breathed almost without moving the diaphragm, and complained much if the epigastric region was compressed. He loathed food; his bowels were costive, and his stools of a blackish colour. He was ordered to take small doses of calomel at night, and draughts with rhubarb and sulphat of potash in the morning. The tongue soon became clean, and the stools natural; his appetite and spirits returned, and he no longer complained of any uneasiness in the head.

This case presents us with a striking example of what I believe to be a common occurrence; I mean a disordered state of the digestive organs taking place subsequently to a considerable febrile affection. Indeed, when we reflect in how weak and irritable a state the brain must be left upon the subsidence of such a disorder, and how much the chylopoietic viscera must suffer from impaired and disordered energy of the brain, we might naturally expect such a derangement of the functions of the digestive organs to ensue. When such disorder happens in this manner, it frequently produces many local diseases, to which the constitution may perhaps be predisposed; a circumstance I shall speak of in a future part of this paper. In the present case it brought on a painful state of parts recently injured, with a considerable degree of fever. That the morbid state of the stomach and bowels was the cause of both, is fairly to be inferred from their ceasing so immediately, when the disorder of the digestive organs was corrected. A case of this kind, presenting an example of sudden recovery, is particularly valuable, because it clearly demonstrates the cause and the effect in such diseases. The cause can indeed be seldom so suddenly removed; and the gradual cessation of it under any plan of

treatment, leaves room for a variety of conjectures as to the mode of cure or of recovery from those disorders which I have considered as effects. I could relate many cases of similar but less severe symptoms produced by the same cause, which gradually got well, in proportion as the disorders of the digestive organs were corrected. As it does not, however, appear to me necessary to accumulate instances to prove so obvious a fact, I shall content myself with adducing two more cases to exhibit such effects in different points of view.

CASE X.

A lady fell down in frosty weather, in consequence of her feet slipping from under her, and the occiput struck against a smooth stone-pavement. She was stunned by the fall, but soon recovered; nor had she for some weeks the severe symptoms which appeared in the sequel. This circumstance shows that there was nothing produced by the blow that necessarily caused the subsequent symptoms; which must, therefore, be attributed to inflammation or irritation taking place afterward. When some weeks had elapsed from the time of the accident, the parts which had been struck became extremely painful; and the pain extended forwards over the scalp to the right eye, the sight of which became imperfect. The integuments upon which the blow had been received were extremely tender, and the patient became faint when they were examined even slightly. These circumstances naturally induced a belief that some disease was taking place; and bleeding and purging were employed to prevent its progress. The symptoms were mitigated for a time by these means, but they quickly returned with as much severity as before. After three months the patient came to London, fully persuaded that nothing but an operation would be of permanent benefit. When I first saw her, she tottered in moving from one chair to another, and replied to questions with hesi-

tation and effort. Her eyesight was so much affected, that she could not read; and she entertained an apprehension that she should lose her senses. Her tongue was but slightly furred; her bowels were habitually costive, and the stools dark-coloured. It was evident where the injury had been received; for the aponeurosis had been separated from the pericranium by an effusion of blood; and, though this blood had been absorbed, the detachment of the scalp was distinguishable by the touch. No inequality was perceptible in the surface of the bone. When I mentioned my suspicion that these symptoms were rather the effect of irritability of constitution, dependent on the state of the stomach and bowels, than of local mischief, she gave not the least credit to the opinion; but said she was persuaded that the bone was starred, and that three fissures extended in different directions. I ordered her to take five grains of the pilul. hydrarg. every second night, and a draught twice a day, containing one ounce of the compound infusion of gentian, two drachms of the infusion of senna, and one drachm of the compound tincture of cardamoms. These medicines produced a considerable purgative effect. On the second day there was but little pain in the head; the patient walked about the room very steadily, and had read a newspaper in the morning. When I asked her opinion of this surprising alteration, she imputed it to the evacuations which had taken place; but she was still persuaded that the bone was injured, and still apprehensive that without some operation, she should ultimately lose her senses. The medicines were continued in such quantity as to procure only one alvine evacuation daily. A fortnight elapsed under this plan of treatment, during which the stools became nearly of a natural colour, and the patient's health was considerably amended. There were times when no uneasiness was felt in the head; and, during some nights, the pain was so trivial as to give but little interruption to her sleep. It was, however, occasionally disturbed by pains, which were, in her opinion, as intense as at any former period of the complaint. Her pulse was good, and her muscular strength greatly im-

proved. The occurrence of the pain in paroxysms, strongly impressed me with the belief that it was nervous, rather than depending upon local disease. Under these circumstances all ideas of an operation were dismissed from my mind, but it was far otherwise with respect to the patient. Being obliged to return into the country, she considered the possibility of a relapse with horror ; and was so convinced that the bone had been injured, that she earnestly requested it might be examined, were it merely to ascertain what was the fact. I saw no objection to this examination, but thought, on the contrary, that advantage might possibly arise from an incision, which would loosen the tension of the scalp, and produce a discharge that might relieve the irritation of the part. I accordingly made an incision of a semicircular form, extending farther back than the part which had been struck, and turned up a portion of the scalp, so as to see the bone, covered by its pericranium, to the extent of a crown piece. The bone was uninjured, and, together with the pericranium, appeared perfectly natural. The scalp being replaced, the wound was dressed superficially, without any attempt to favour the union of the parts. If they united under these circumstances, there would be an additional reason for believing, that neither the bone nor the subjacent parts were diseased. The pain was as severe for the two first days and nights after this examination as it had been at any former period ; it abated when the wound began to discharge, and had entirely ceased on the fifth day. This state of tranquillity continued as long as the patient remained in town, which was about three weeks after the division of the scalp. The wound at that time had nearly healed. She has since had occasional returns of pain in the head when her general health has been disordered, but never to that degree as to induce a suspicion that any local vascular disease existed.

To exhibit the effects of the reaction of disorders of the digestive organs upon those of the head in another point of view, I subjoin the following case.

CASE XI.

May 29, 1805, a labouring man, aged forty-five, fell from a considerable height upon his head, and was immediately brought to St. Bartholomew's Hospital. No fracture of the skull could be discerned : and the patient seemed to labour under the effects of violent concussion of the brain. By venesection, and other antiphlogistic means, he soon recovered his senses. Every thing went on very favourably for three days, when he was attacked with shivering, nausea, pain in the head, impatience of light, and other symptoms, which are usually considered as denoting inflammation of the membranes of the brain. He was consequently bled ; and had a blister applied on the head. He was suddenly seized in the evening with a more excruciating pain in the head, which, after lasting half an hour, was succeeded by convulsions, so violent, that three men could scarcely hold him. When the fit abated, he expressed himself much relieved, and said that he was easier than before its accession. Some calomel and rhubarb were given to obviate a costive state of his bowels. On the next morning (June 2d) he had a return of the pain and convulsions ; and the symptoms were so violent, that he was bled four times in the course of the day. This treatment, however, had no effect in diminishing the pain and other symptoms, and another fit of convulsions took place in the evening. The purgative operated on the succeeding night, and brought away a large quantity of highly offensive feculent matter of a light greenish-yellow colour. On the 3d of June his breath was extremely offensive ; his skin hot and dry ; his pulse quick ; his tongue thickly furred ; and he had great tenderness in the epigastric region, and right hypochondrium. He was ordered to take two grains of calomel immediately, and a saline medicine at intervals ; this produced two motions in the course of the day. By pursuing this plan for a few days, the state of the bowels was rendered more regular, and the discharges acquired a healthy colour ; in proportion

as this was effected, the tenderness of the abdomen was removed, and the tongue became clean. He had no return of convulsions, the pain and other symptoms subsided; and in a short time, when the digestive organs had been restored to a natural state, he went out of the hospital perfectly well.

Cases of this description have been noted from the earliest ages. Many passages in the works of Galen show that he was well acquainted with the circumstances that have been stated in this section. Bertrandi* has related instances of abscesses taking place in the liver, consequent to injuries of the head. Andouillé† relates additional cases, and makes further observations on the same subject. Of late, Richter‡ has delivered similar opinions, and has directed the practice which should be pursued, when the head is disordered by the reaction of affections of the digestive organs. Still, however, these circumstances seem to me to be stated rather as occasional, than as occurrences which are common and naturally to be expected; and I therefore think myself warranted in supposing, that they have not made a sufficient impression on the minds of surgeons, in this country at least.||

I beg leave, in the conclusion of this section, to repeat what was said in the former one, viz. that I consider the disease as depending on nervous irritation in the parts affected, which is either caused, maintained, or aggravated by disorders of the digestive organs. Yet as the local disease must be regarded as chiefly nervous, it might, in some rare instances, exist independently of any manifest disorder of those organs. I may further add, that much nervous irritation in any part generally excites vascular action. It becomes therefore highly important to attend to the nature and cure of such disorder, as it might ultimately lead to the production of organic disease, which would destroy the patient.

* Mémoires de l'Académie de Chirurgie, tom. iii. p. 484.

† Ibid. p. 506.

‡ Chirurg. Biblioth. b. viii. p. 538.

|| In Doctor Cheston's Pathological Observations, however, cases of this description are noticed.

C A S E S.

SECTION III.

On undefined and undenominated local Diseases arising from Disorder of the Constitution.

THE next class of cases, to which I shall call the reader's attention, is that of unhealthy indurations, abscesses, and sores. Sometimes but one local disease of this description exists, but in general they break out in succession in different parts of the body. The circumstance of their successive formation is, I think, a proof that they depend upon some error in the health in general; and I have accordingly observed that they are seldom, if ever, unattended with disorder of the digestive organs. The imperfect history which the patients generally give of their previous state of health, will not enable us to determine with certainty, that the disorder of the bowels was the cause of their ill health and subsequent local diseases; but I can confidently affirm, that those diseases in general become tractable, in proportion as the disorder of the viscera is corrected; and that frequently no new local symptoms occur, after some attention has been paid to the state of the digestive organs. The diseases to which I allude, have not been described in books of surgery; and indeed it is scarcely possible to delineate with precision their various appearances. It would be quite impracticable to describe all the diseases which make the subject of the present section; namely, unhealthy indurations, abscesses, and sores. They may be compared, not improperly, in variety and number, with the infinitely diversified combinations and shades of colour. Yet a brief and general description of them will assist to recall them to the remembrance of the

experienced surgeon ; and to enable the inexperienced practitioner to recognise them when they occur.

Some of these affections are quite superficial, occupying merely the skin. The first that I shall describe is, I believe, well known to surgeons, as a disease, which is frequently, though not constantly, cured by giving mercury carried to such an extent as slightly to affect the constitution. A small induration or tubercle takes place in the skin, and this is followed by the successive formation of others at small distances from the original one. The skin between these tubercles becomes thickened. Chord-like substances, which are probably indurated absorbents, may sometimes be felt, extended along the thickened skin. The tubercles ulcerate, and form foul sores, which heal slowly and break out again.

Another species of superficial or cutaneous ulcer begins generally in one point, and extends in every direction. The chasm of the ulcer is formed either by a very sudden ulceration, or by sloughing. A sore is left, which first secretes a sanious, and then an ichorous fluid. Granulations afterward arise, and the sore heals. The granulations are however indurated and unsound ; and when the patient supposes that the sore is cured, it is suddenly reproduced by a process similar to that by which it was originally occasioned. After some time the ulcer again heals, and again breaks out. Whilst these processes are going on in the middle, the sore enlarges in its circumference ; the edges which are thickened become at times highly inflamed, and either ulcerate or slough. The disposition to disease is aggravated by fits, and there are intervals when it is apparently tranquil. When this sore has enlarged to a considerable extent, in the manner already described, the central parts, which have healed unsoundly, break out into separate ulcers ; and thus present an appearance of several sores, connected with each other by indurated skin or newly formed substance.

I shall briefly mention some of the principal circumstances relating to the last sore of this description, which came under my care. The patient, who had been ill for more than two

years, and had taken a great deal of mercury, came from the country in very bad health, and with his digestive organs much disordered. The sore was so painful, particularly at night, that he was in the habit of taking large doses of opium to procure rest. It occupied the back of the hand and wrist. He had had somewhat similar sores on his head and face; but they were nearly healed, though disposed to ulcerate again. By that attention to the state of the bowels which I have described, and by dressing the sore with an aqueous solution of opium, the greater part of it was healed in the space of three weeks; and the remainder was so much amended, and so little painful, that he had left off his opium shortly after the commencement of this treatment. As the patient's circumstances made it inconvenient to him to remain in town, he went into the country, where the sore broke out again. He then applied to a person who sold a famous diet-drink; and before he had taken twelve bottles, the sore was perfectly healed, and has not since broke out. The diet-drink, he says, had no sensible operation; but his bowels became regular and comfortable, and his appetite amended by taking it.

Another variety of these sores originates in a more deeply seated disease. The cellular substance under the skin becomes thickened, and an unhealthy abscess follows; after the bursting of which, a foul sore is formed. In consequence of this process, the fascia of the limb is sometimes exposed to view, and seems to have sloughed: when the slough has separated, the disease may get well slowly. In many cases, however, there is no exposure, nor separation of the fascia. Sometimes the sore does not extend beyond the limits of the original induration, but heals slowly; while other diseases of the same kind occur in succession in various parts of the body. In other cases, the ulceration of the original sore spreads along the contiguous parts, whilst those which were first affected get well; and thus the sore assumes an herpetic character. In many cases the ulceration extends from the whole circumference of the sore, and thus the scar and

ulcerated edges have a circular or oval form; in others, the disease is propagated in particular directions, so that the ulcerated surface presents the most irregular and singular figures.

These diseases sometimes are small in extent in the beginning, but enlarge considerably before the skin gives way; and, when this happens, it proves a kind of crisis to the disease, which afterward heals slowly. In these cases it becomes the object of surgery to bring the disease to a crisis, whilst it is yet of small extent; which may be effected by producing ulceration of the skin by means of caustic.

Some of these sores are formed from diseases beginning in the absorbent glands; in which case the gland, having first been indurated, suppurates and bursts, and ulceration ensues. When this has taken place, in an absorbent gland of the neck for instance, another ulcer may form, in the manner above stated, in the skin and subjacent parts, without any gland being involved in it. A third ulcer, having a diseased gland for its cause, may form in the vicinity; and thus the disease proceeds, but without any regularity.

I once thought it a necessary but most difficult task for a surgeon to remark the varieties of these diseases, in order to understand his profession, and contribute to its improvement. But since I have found that these diseases indicate some disorder of the health in general, the correction of which is the great object in their cure and prevention, I have perceived that there is less necessity for undertaking this most arduous investigation; which, indeed, could never be accomplished without very extensive opportunities and indefatigable diligence.

It will be found in the majority of these peculiar diseases, that the patient had been indisposed for some time before the occurrence of the complaint, and that afterward the health had become more evidently deranged. The digestive organs are disordered. The tongue is furred at the back part, chiefly in the morning; and the biliary secretion is deficient or depraved. My attention has been directed to

the correction of this disorder; and the most beneficial effects have resulted from this attention. The sores have healed readily in some instances; and, in those cases where many had previously formed in succession, no new disease has in general taken place. In some few instances, new sores have formed after the medical treatment of the disorder had commenced, and even after it had been for some time continued. This probably arises from the difficulty which is experienced in correcting an habitual and long-continued constitutional disorder. In some still rarer cases I have found similar but much milder diseases arise, after the disorder of the digestive organs had been in a great degree corrected.

Whilst I am writing this, there are four patients, whom I have attended in St. Bartholomew's Hospital, with these diseases; which I mention, to show the younger part of the profession how frequent they are. The health of these patients has been surprisingly amended in a very short period, by employing the means which I have described; and the sores have healed rapidly, although nothing but simple dressings have been applied to them.

It is not meant by these observations to depreciate the utility of topical applications to unhealthy ulcers, but merely to show how much they depend on the state of the health in general; for some of them, which have remained uncorrected by a great variety of local applications, will get well under simple dressings, when the state of the constitution is amended. It is not, however, to be expected that this will generally happen: for local diseased actions having been excited, become established, and may continue independently of the cause which produced them. Topical remedies will, under these circumstances, be employed with the greatest advantage. Again, topical applications are of the highest utility in general practice, because an irritable sore affects the whole constitution, and aggravates and maintains that disorder by which it might have been originally caused. The disorder of the digestive organs cannot in many instances be corrected,

till the fretful state of the local disease is diminished. I may further mention, with relation to this subject, that I have seen patients, who scarcely ever slept from the pain of the local disease, whose stomachs were greatly disordered, and who had a distressing purging, which could only be controlled by opium, sleep without interruption during the night, regaining their appetite, and have their bowels become tranquil and regular, when after various trials, a dressing has at last been applied, which quieted the irritable state of the sore. It is right however to mention, that the effects of such an application are not, in general, permanent : but after a time the sore becomes again fretful, and requires some new dressing to sooth or control its irritability.

I have seen some cases of such diseased sores as I have described, in consultation with other surgeons, who have become convinced that my opinions are well founded. Others have occurred, even in the persons of medical men, whose feelings co-operated to render their conviction more strong.

Having thus, from general observation, acquired the opinion that the peculiarities of local disease depend chiefly on the state of the constitution, I shall relate some cases, which were treated in conformity with the principles which such an opinion would naturally suggest. I must, however, previously caution the reader against inferring, that I attribute all local diseases to some general error in the state of the health. I have seen local diseases, which could not be deduced from any general indisposition, nor corrected by remedies which act simply on the constitution at large. I wish to guard against the suspicion of being inclined to make general assertions ; while I avow at the same time, that my observations induce me to believe, that the peculiarities of local disease generally depend upon constitutional causes. Reason also suggests the same opinion ; for if sores of the same character break out in succession in different parts of the body, can we doubt that they arise from the state of the health in general ?

There appears to me a combination of nervous irritability and weakness, and to such a combination I am inclined to attribute the peculiarities of these variable and unclassed local diseases. Perhaps I may explain my meaning further, by adverting to what happens not unfrequently in cases of venereal and other buboes. The part and the constitution have been both weakened by the disease that has occurred; they have been further debilitated by the mercury employed for its correction. The disease subsides, but a new disease and action commences; a trivial wound frets out into a phagedænic sore, which is very difficult of cure. The sores, in different cases, are nearly as various in appearance as those of which I have been speaking. To what are we to attribute these dissimilar, perplexing, peculiar sores, if not to irritation occurring in weak and irritable parts? As the peculiar diseased actions of these sores originate chiefly from the weakness and irritability of the parts, induced by the previous disorder which they have undergone; so in their advanced stages they frequently present the best instance that can perhaps be adduced, of a peculiar local disease existing independently of constitutional disorder. It is true they affect the health in general; but it may, by attention, be kept in a moderately right state, and yet the sore remains unamended. The diseased actions of these sores sometimes gradually, and sometimes suddenly cease; when healthy actions succeeding, the sore heals. I remember a sore of this description, to which almost every variety of dressing had been tried without benefit. It was very extensive, and had burrowed in various directions beneath the skin. The ulceration at length became stationary; but after nine months the sore still remained as foul and fretful as it had been for a considerable time; when in the course of one week it perfectly cicatrized, leaving the hollows which I have described; for it had thrown out no granulations to fill these chasms.

Having thus stated the opinions which I have formed relative to these kinds of local diseases, and which have been

deduced from cases too numerous to record, of which I have preserved no accurate accounts, I proceed to relate some cases treated in conformity to these opinions, which will, I trust, be sufficient to exemplify and illustrate the present subject.

CASE XII.

A gentleman's servant, between thirty and forty years of age, was sent to me with a bad ulcer in his cheek, situated between the nose and under eyelid. The surrounding parts were inflamed, swollen, and indurated, so as to rise fully half an inch above their natural level. The sore was of an oval figure, measuring about an inch and a half in length, and half an inch in breadth and depth: indeed I could scarcely see its bottom. The surface was covered by adhering matter of a greenish hue. The cuticle around the margin was thickened, and had in some parts scaled off. The patient had been rubbing in the mercurial ointment for this complaint. He declared that he had had no chancre for many years, but had contracted a gonorrhœa about a year before his present disorder. His health was much disturbed; he had no appetite; his tongue was much furred and tremulous; his bowels alternately costive and lax; his fæces blackish. I advised him to take five grains of rhubarb about an hour before dinner, and five grains of the pilul. hydrarg. every second night, with castor-oil or senna-tea occasionally, so as to procure a motion daily. The sore was dressed with spermaceti cerate. I saw him again in three days, when he said that he felt himself under the greatest obligations to me. He had been entirely free from pain and distressful sensations since he began to take the medicines, although he declared that before that time, he should have been thankful to any one who would have destroyed him. I mention this, because I have often remarked in these cases, the surprisingly great relief and comfort which have arisen from a change, produced by means apparently insignificant and inadequate. The bowels now

acted regularly, and the stools were more copious and of a more natural colour; and to this correction of the biliary secretion I am inclined to impute that relief which he so forcibly depicted. The sore had discharged profusely; the surrounding swelling and inflammation were much lessened. He pursued the same plan of treatment for a month, during which time he recovered his appetite; his tongue became clean; his bowels regular, and the biliary secretion natural. The sore had contracted into a small compass, but without the appearance of granulations; and the surrounding parts were not swoln, though still red. His health became at this time again much disordered, in consequence of his catching cold from exposure to rain. He had pain in the bowels, with a slight purging; his appetite failed; his tongue was furred, and he had a severe cough, attended with copious expectoration. The sore on the cheek also enlarged to about one half of its former size, and the surrounding parts became tumid. I had the patient admitted into St. Bartholomew's hospital, where he took the decoction of cascarilla with squills. His cough became materially better in a short time: the state of his stomach and bowels also greatly improved. The sore again diminished in size. About a fortnight after his admission into the hospital, an eruption came out over his whole body. The spots were of a copperish hue, but rather smaller, and more elevated, than venereal eruptions generally are.* Some of the eruptions gradually disappeared; and, in about a fortnight, it was certain that many were entirely gone. About this time he began to complain of his throat; and an ulcer, of the size of a shilling, formed in each tonsil. The edges of these sores were elevated and uneven, without any appearance of granulations; the surface was covered with yellow adhering matter. The patient now again caught cold: he was attacked with pain in the bowels and purging, which obliged him to get up frequently in the night, and to remain

* Many persons who saw the patient did not entertain a doubt but that all the symptoms arose from syphilis; it was their progress alone which evinced the contrary.

for some time out of bed. The cough and expectoration returned: he lost his appetite, and he had a furred tongue. Dr. Roberts, whom I met at the hospital, did me the favour to prescribe for him. In a day or two afterward, an erysipelatous inflammation appeared on the right side of his face, opposite to the situation of the sore. The eyelids were so tumid that he could not open them; the erysipelas spread to the other side of the face; and the other eye was equally closed. The fever also ran very high, and the patient became delirious; so that he was obliged, for many days, to be confined by a strait waistcoat. These symptoms gradually abated, and he recovered, so as to be in better health than I had ever seen him. He was discharged in about six weeks, in a state of convalescence, and attended by Dr. Roberts as an out-patient. The eruption and sore throat had entirely disappeared; the original ulcer was firmly healed; and the contiguous skin had become soft and natural, though it was still discoloured. A year has since elapsed, and he has had no return of his complaints.

It is, I think, sufficiently evident, in the present instance, that the peculiarities of the local diseases had their origin in the state of the constitution.

CASE XIII.

I was consulted by a medical gentleman in my neighbourhood, on the case of a lady about forty years of age, who had been long subject to dyspepsia, and severe headaches. Her present and chief complaint had been of about three months' duration. It began with weakness, and an apparent irregularity in the motions of the lower extremities, attended with considerable pains resembling rheumatism, and rigidity of the calves of the legs. These symptoms increasing, she was unable, in the course of a month, to move about at all, but was obliged to be lifted in and out of bed. At this time an induration of the muscles of the calf of each leg had taken place. The indurated substance was about three inches in length,

and between two and three in breadth. It was severely painful at times, and the integuments covering it were occasionally inflamed. There was also pain and some swelling in the ham. Leeches, sedative lotions, and mercurial ointment had been applied; cicuta and tonics had been given, but without alleviating the symptoms. I first saw the patient about six weeks after she had been obliged to keep her bed entirely; and the peculiarities of the present case led me at once to refer its origin to the state of the health in general. The appetite and digestion were impaired, the tongue was much furred, and the *fæces* blackish. I merely recommended fomentations to the indurated parts, considering it the primary object to correct the morbid state of the digestive organs. With this view the compound infusion of gentian with the infusion of senna and tincture of cardamoms was given in such doses as to procure an adequate evacuation daily, and five grains of the *pil. hydrag.* were taken every second night. These simple medicines were completely successful: after taking them a short time, the discharges from the bowels were natural, and properly coloured with bile. The appetite returned; the tongue became clean, and the pains almost immediately ceased. No cutaneous inflammation, indicating a disposition to suppuration, appeared again over the indurated parts, which gradually recovered their natural state. In a fortnight the patient could go about with a stick, and in two months could walk as well as before her complaint. She has enjoyed better health since this time, than for many years before.*

* The state of the indurated muscles, in this case, was such as would lead to the belief that suppuration would take place in different parts of the hardness: indeed, I have seen many cases less formidable in appearance terminate in that manner. Seeing how much the irritability of muscles is disordered by that state of constitution which I have been describing, I think it is allowable to conclude that diseases of muscles, productive of alterations in their natural structure, originate from this cause.

CASE XIV.

A gentleman, thirty-two years of age, who had been subject for several years to occasional attacks of severe pain in the bowels, was seized, about the end of August, with a violent purging, which continued for a fortnight, and was attended with fever. About a month afterward, he felt pain in his leg at night, which gradually became continued even during the day, and obliged him to confine himself to bed. In the beginning of October a swelling was perceived near the inner ankle, which suppurated, and was opened on the twentieth of the same month. Two large tea-cups full of dark brown matter were evacuated. The discharge continued profuse for some time, and afterward diminished. Four other small gatherings then took place in succession, and, bursting, continued to discharge; each aperture fretting out into a foul sore. About the beginning of February I first saw this case, which was considered as a disease of the bone. The five sores had apertures in them leading to sinuses, which communicated with each other. A probe introduced into one of these near the bottom of the tibia, could be moved upwards and downwards along the surface of the bone, which was not, however, denuded. From an upper ulcer the probe could be passed behind the bone, and under the muscles of the calf; this indeed seemed to be the original seat of the abscess, from which the sinuses proceeded to their different outlets. The integuments were œdematous, and firm to the touch, so that I could not distinctly feel the outline of the tibia; but I thought that the bone was not altered either in form or size. The firmness with which the patient stood upon the limb, and the want of aching pain in the bone, contributed also to make me believe that it was not diseased, and that the whole disorder consisted in an unhealthy abscess, the discharge from which issued from the various sinuses in the manner already described. I could not but attribute such a disease to a general disorder of the health; and indeed the patient's countenance and appearance

indicated a constitution much weakened and harassed by illness. His tongue was furred, and the discharges from the bowels were irregular, deficient in quantity, and of a blackish colour. With a view to the correction of these symptoms, I directed the patient to take five grains of the pil. hydrarg. every second night, and the infusion of gentian with senna, so as to procure one motion daily. But little benefit was obtained by these measures; and in about a fortnight afterward a thickening of the integuments took place over the fibula; a considerable swelling gradually arose, and another abscess formed, which burst in about three weeks, and discharged a considerable quantity of brownish matter mixed with blood. During this time the limb was merely poulticed, and the patient could not leave his bed. His pain was extreme, and he had no rest at night. The use of opium was necessary to alleviate his sufferings, and opening medicines occasionally, to procure stools. He took but little nourishment, and his health greatly declined. The disordered state of the stomach and bowels was much aggravated by this local irritation. Indeed the situation of my patient was now particularly perplexing. The local disease made the general health worse; and the aggravation of this general disorder, which appeared to have been the cause of the local disease and of its continuance, proportionately increased the latter malady. The confinement to bed afforded an additional obstacle to recovery; yet it was impossible to remove him in his present state, on account of the pain which motion occasioned. The leg was insupportably painful in a dependent posture. As change of air and exercise seemed essential to his recovery, I was induced to try if Mr. Baynton's excellent bandage, by supporting the weakened vessels, would prevent their distension, and the consequent pain. The sores were dressed, after as much matter had been expressed from the sinuses as could be done without occasioning pain. Strips of sticking-plaster were applied after the manner of a many-tailed bandage; and the limb was afterward rolled with a calico-roller. The patient felt comfortable, and found his limb strengthened.

He was directed to wet the roller, if the parts became heated. The effect of this treatment was surprising both to the patient and myself. The pain, which had been constant before pressure had been employed, ceased from the time of dressing till five o'clock on the following morning, but from that time it gradually increased till noon, when the dressings were renewed. The cause of this occurrence now became manifest; for upon opening the bandage, more than a tea-cup full of matter was discharged from the different sinuses. I dressed the limb as before, cutting holes for the escape of the matter opposite to two of the chief sinuses. I desired the patient to put his leg to the ground, in order to ascertain the effect of the perpendicular position when the vessels were supported, and he experienced no inconvenience. The second day passed, as the former, without pain; and as the matter poured into the sinuses readily escaped, he had no uneasiness from its detention. I recommended him to sit up, and put his leg to the ground several times in the day, in order to accustom it to that position. After I had dressed it on the third morning, the patient stood up, and took two or three steps very feebly; but this was rather the effect of general weakness than of particular infirmity in the diseased limb. I now advised him to go a little way out of town in a carriage. The air and exercise, together with the freedom from pain, produced a very beneficial effect. He began to recover his appetite, to sleep at night, and acquired so much strength, that he was able in a week to go about his house, and to resume his attention to business. The discharge from the sinuses was very trifling, and the sores looked much better. The patient now undertook to dress his leg himself, and hired a lodging out of town, so that I only saw him occasionally. His limb was so much amended in the course of a fortnight, that it caused no more trouble than that of daily dressing. But his health was not good. His countenance had the same expression of illness as when I first saw him; his tongue was white and dry; his bowels costive; and the stools of an unhealthy colour. I therefore recommended him to take again

the same medicines which I had formerly ordered him. His health now improved ; his tongue became moister, and less furred ; the bowels more regular, and the *faeces* coloured with a more healthy bile. He continued recovering till the middle of April, when he began to complain of the trouble of applying the sticking-plaster, and used the calico-roller alone. I did not see him for three weeks, and then found him in a very desponding state. He complained of the tediousness of his confinement, which had lasted more than half a year, and said that he would willingly submit to have the sinuses laid open, if that would make him well. I found his leg well, excepting two orifices near the tibia ; three ulcers, which formed the apertures of as many sinuses, had healed ; the outline of the bone could be distinctly felt ; and there was no alteration of it in form or size. I was unable at first to account for this despondency under such favourable circumstances ; but I soon discovered that it was the effect of hypochondriacism, for his tongue was much furred and dry ; and at the same time that he left off the bandage, he had also discontinued his medicines. I urged him to return to them immediately, and called on him again in ten days, when he perceived clearly the absurdity of his late despondency, as well as its cause. He called on me on the 10th of July, with a new swelling near the upper part of the tibia, which threatened to form an abscess similar to those which had formerly taken place. I covered the limb with the bandage of sticking-plaster, as at first. The new disease disappeared entirely, and the old ones were so much benefited by the exact and equal pressure, that the patient felt no difference between the sound and the affected limb. The ulcers gradually healed, and his health is better than it has been for some years ; yet still there is an evident tendency to disorder of the digestive organs.

CASES.



SECTION V.

On more defined Diseases, as Carbuncle and Scrofula, arising from Disorder of the Constitution.

IF, upon an extensive and accurate examination of the subject, it were to appear that many very peculiar and very dissimilar local diseases originate from a common cause, namely, from weakness and irritability of the system in general, our inquiry would be further extended, and we should feel anxious to know whether similar causes may not operate in the production of more common and more frequent local disorders. As far as my late observations have enabled me to determine, that state of the digestive organs, which I consider as causing or denoting constitutional disorder, exists prior to the formation of a carbuncle; and is exacerbated during the progress of that disease. This opinion indeed will appear probable, if we consider the kind of persons who are attacked with carbuncles and the considerable derangement of health which even a trivial local disease of this nature occasions. I shall mention but one case in support of this opinion, though I have made similar remarks in several other instances.

CASE XV.

I attended a gentleman who was afflicted with carbuncles, during three successive attacks, at the interval of about a year between each. I made an incision through the indurated skin, down to the subjacent sloughy cellular substance, and thus brought the local disease to a crisis. This treatment

was sufficient in the first two attacks ; the extension of the disease was prevented ; the sloughs separated, and the wound healed. The patient, whose mode of life was intemperate, had cough ; difficult respiration ; fulness and tenderness of the parts situated in the epigastric region ; unhealthy secretion of bile ; and, in short, all those symptoms which denote a very considerable degree of disorder of the digestive organs : it is probable indeed that some organic disease of the chylopoietic viscera existed. After he had recovered from the carbuncle, I told him that the most important disease still existed ; and urged him to be attentive to his diet, and to the directions of his medical attendants. He still however continued to live intemperately, and his disorder increased. He was indeed nearly dying from diseased viscera, when he was attacked with carbuncle for the third time. The division of the parts produced a temporary cessation of the disease ; but it began again to spread in every direction from its circumference, and he died.

It will not, I believe, be doubted, that biles are a slighter degree, with some variation, of the same disease which causes anthrax and carbuncle ; and it is almost unnecessary to remark, that some persons are subject to a successive formation of very large and troublesome biles from the least irritation of the skin. I have seen many persons thus affected ; and there has been, in every instance, disorder of the digestive organs, the correction of which has prevented the return of these vexatious local diseases. One gentleman, who had been tormented for many years by the quick successive formation of biles as large as eggs, has been free from them for some years ; though he has had other disorders, which denote such a condition of the constitution as it has been my object to describe in this paper.

I have remarked in many instances that diseases of the absorbent glands, such as are usually denominated scrofulous, occurring in adults, have apparently originated from the disorder which I have described. In several cases the local disease was of long duration, and had become worse rather

than better under various plans of medical treatment ; yet it amended regularly, and sometimes even quickly, in proportion as the state of the digestive organs was corrected. I need not detail any cases on this occasion, since every surgeon must know them familiarly. The patients are commonly sent to the sea-side, or into the country; where enlarged glands subside, and those which have suppurated and ulcerated heal; and the local disease recovers, in proportion as the health in general is amended.

There are cases of scrofulous diseases occurring suddenly, and in various parts of the body at the same time, which seem to originate in that state of the constitution which is occasioned by disorder of the digestive organs. I have chiefly observed these cases in children; and they have followed some violent febrile affection. In two cases which I shall particularly mention, the smallpox was the antecedent disease. I have already stated, that when the health has been considerably disordered by some violent disease, the digestive organs may become subsequently affected; and that this disorder proves a cause of many secondary diseases.

CASE XVI.

A child of two years old had the smallpox, from which he did not seem to recover, but on the contrary fell into a very bad state of health. The absorbent glands on the right side of the neck became enlarged in succession, so as to form altogether a very considerable tumour, which extended down to the collar-bone. The axillary glands then became affected in the same manner; the swelling was unusually great, and seemed to extend under the pectoral muscle, elevating it, and forming by this means a continuation of tumour with the glands of the neck. These swellings had partially suppurated, and had broken in two places, viz. in the neck, and about the margin of the pectoral muscle; but no relief followed; on the contrary, the mass of disease seemed to be rapidly increasing. The child was bowed forward, so that

the spine was much curved in the loins; the left leg appeared paralytic; and a swelling was perceived in the abdomen, which I could not but ascribe to an enlargement of the external iliac glands. The child was extremely emaciated; his skin felt hot and dry; his tongue was covered with a brown fur; and the stools were black and highly offensive. As there was no expectation that he could survive this desperate state, those medicines only were prescribed that seemed likely to correct the state of the digestive organs: such as occasional doses of calomel and rhubarb. A strict attention to diet was also recommended. Under this treatment the stools gradually became natural, and the tongue clean. The disease seemed to stop immediately. As the health was restored, the swellings rapidly subsided, and the child became one of the healthiest and stoutest of the family.

CASE XVII.

A female child, after having had the smallpox, got into bad health from disorder of the digestive organs. She was then suddenly attacked with a scrofulous affection of the knee and elbow of the opposite sides of the body. Two collections of fluid had taken place beneath the fascia of the leg and thigh. The joints were greatly enlarged, and the swelling was apparently caused by an increase in the size of the bones. Had I seen either joint, as a single case of disease, I should have said that it would leave the child a cripple. It was manifest in the present instance, that these local diseases were the consequence of general ill health; and that the first object was to correct the disorder of the system. The functions of the digestive organs, which had been deranged, were restored to their natural state by employing the same diet and medicines which had been so signally successful in the preceding case. By these means the health was re-established, and the local diseases gradually disappeared.

I have heard it remarked by surgeons of great experience, that patients often recover when many scrofulous diseases

appear at the same time ; although some of them may be so considerable, that they would seem to warrant amputation had they appeared singly. The cases which I have related afford a most clear and satisfactory account of the mode of recovery. General irritation and weakness bring on diseases, to which perhaps a predisposition may exist, in several parts of the body ; these cease when their exciting cause is removed.

Of late indeed I have been equally surprised and rejoiced to see swellings of the absorbent glands in children readily dispersed by that medical attention to correct errors in the functions of the digestive organs, which I have described. Some of these swellings came on rapidly, and some slowly ; but these were so large and so much inflamed, that if any person had formerly told me they might be dispersed by such measures, I should have thought the assertion an absolute absurdity, from its direct contradiction to my former experience. From among a considerable number of cases I shall relate the following :

CASE XVIII.

The son of one of my friends had gradually fallen into a very bad state of health. The child was about six years of age, and had been unwell for several months ; when in conclusion, two glands in the neck became gradually enlarged, till each had attained the size of a large walnut. The child's tongue was much furred, his appetite very deficient, and capricious ; his bowels had a costive tendency ; his stools were never of a proper colour. His flesh was wasted and flabby, his countenance pale, his pulse feeble and frequent ; and his general demeanour languid and irritable. I told his father, that I could advise nothing as a local application better than a poultice of bread and water ; and that the chief object of attention was the correction of the disorder under which the child had long laboured, so that his constitution might regain its natural tranquillity and strength. Upon

this subject I promised to speak to the gentleman who had hitherto attended the child. In about two days a deep redness came over the most prominent part of each gland, denoting, as I concluded, a disposition in the internal parts to suppurate. The child took half a grain of calomel with five of rhubarb every second night, and ten drops of the acid. sulphur. dilut. three times a day. In about a week, an evident amendment was observed in the appetite, spirits, and colour of the excretions from the bowels. In a fortnight, the spirits of the child became, to use the words of the parents, ungovernable; and an evident amendment of the health in general took place. In a month, the child might be said to be well; though he still remained thin. After another fortnight, he discontinued all medicine, except the occasional use of the powders, for at this time all vestiges of enlargement in the glands had disappeared. I do not relate this case as extraordinary, for I have seen several worse cases cured by the same means; and as I have said, some of the swellings have come on tardily, and others rapidly. It is related merely, because in the same family another child had suppuration of the glands, which left a sore that healed slowly.

It cannot indeed be proved that these cases would have been strumous; it can only be said, that to all appearance they were the same as others which I have formerly seen suppurate, and form sores slow in healing, and such as are generally denominated scrofulous.

CASE XIX.

A slender child about five years of age had five swollen glands on the right side of the neck, and three on the left. Their magnitude was considerable, and the child's appearance sickly; and the disorder had so threatening an appearance, that the gentleman who attended the family requested the parents to take some additional opinion on the case. The tongue was furred, and the bowels so habitually costive, that sometimes a week elapsed without any alvine evacuation. As the child was feverish, he took at first some saline

medicine in a state of effervescence, which was afterward changed for the diluted vitriolic acid. He also took half a grain of calomel, every second night, which gradually brought about a regular secretion of healthy bile, and in about three weeks the child might be said to be well, for his bowels acted regularly when no medicine was taken, and the discharges from them were properly tinctured with bile. The use of calomel was now only recommended, if the appearance of the stools varied from the rhubarb colour. The swollen glands disappeared, nothing but a bread and water poultice having been applied to them. The bodily powers of the child were considerably augmented, and his aspect became healthy.

CASE XX.

A boy between seven and eight years of age had a lameness about the hip, which was so considerable as greatly to alarm his parents. There was no tenderness when the joint was compressed either in front or from behind. The tongue was furred, and he had been subject to slight paroxysms of fever, resembling an intermittent. I recommended half a grain of calomel with a few grains of rhubarb every other night. In a short time the lameness so entirely disappeared, that I was no further consulted on his case. About eight months afterward, however, I was desired to see him with three considerably enlarged absorbent glands on one side of his neck, and two on the other. They had for many days continued to increase. He was at that time feverish, and I now became more acquainted with the state of his health in general. I learned that he eat rather voraciously, and could not be restrained from taking very highly seasoned food; that though his bowels regularly enough evacuated the residue of the food, the stools were of various, and always of faulty colours, and very offensive; that he perspired profusely upon the slightest exertion. His skin was covered every where with scurf and eruptions, and his hands were hard, harsh, and

chapped. He took the medicines, as in the preceding case, for about the same length of time, when the glandular complaint was well. He continued the half grain of calomel, however, for three months, for the secretion of bile had not even in that time become healthy in quantity and quality. His skin was, however, perfectly smooth and free from eruptions. His hands only retained in a slight degree their former feel.

I have also seen instances of sores apparently scrofulous left after the suppuration and ulceration of diseased glands, which had continued for more than a year, heal rapidly under the same kind of treatment. I have, however, seen other instances, in which the sores did not appear to be amended by such constitutional treatment.

I have also observed several instances of strumous affections of the fingers in children get well in proportion as the general health has become established by correcting disorders of the digestive organs. I need not however detail them. These diseases were, in my opinion, strictly scrofulous. The nature of the disease in the following case will not I think be doubted, and on this account I relate it.

CASE XXI.

A child about five years of age, after having had the measles, got into a bad state of health, and had several scrofulous abscesses form on the fore-arm. They became sores of various sizes, but in general about that of a shilling; the surrounding skin was thickened and of a purplish hue. The sores were foul, and without granulations. In this state they were when I first saw the patient, and had continued with occasional amendment and deterioration for two years. The child's countenance sufficiently indicated that he was ill, also his tongue was furred, his appetite deficient, his bowels costive, and their discharges faulty. The same medicines were prescribed as in the former cases. In about six weeks the child got into remarkably good health, which it had not en-

joyed from the time of its first indisposition, and the sores rapidly and soundly healed.

My observations have led me to believe, that most local diseases are preceded by general indisposition, of which the disordered state of the digestive organs is an evidence, and may have been a cause. The relief arising from the correction of this disorder is indeed surprising, and the general knowledge of this fact I have deemed my duty to promote to the utmost of my power. When the appetite has been deficient, I have been accustomed to recommend acids as medicines, when on the contrary it has been good, and the digestion difficult and imperfect, I have recommended bitters and alkalies.

I mention this to account for my giving the sulphuric acid in these cases. It is, in addition to its medical properties, so pleasant, that even spoiled children will take it without agitating themselves, and distressing their parents. It pleases me to be able to give proofs of its utility; because, I think, they will be allowed to disprove that any specific good arises from the administration of alkalies. Alkalies may be useful occasionally in dyspeptic cases; but that they have no specific action in the cure of scrofula, I have long thought, from some experiments which I made on this subject at the hospital. In cases of scrofulous glands, I gave soda in doses which were gradually increased till they affected the qualities of the urine, without perceiving any benefit to accrue to the local disease from its use. The pleasure which I feel in thus endeavouring to disprove the specific virtues of alkalies arises from this circumstance:—That if I am right in my notion, that they are chiefly useful by their operation in the stomach and bowels, it shows how much better it is to be informed of what ought to be done for the cure of diseases, than of the means by which it may occasionally be accomplished; or in other words, it shows how much superior the rational is to the empirical practice of medicine.

That erysipelatous inflammation is the consequence of a disturbed state of the system, caused or maintained by disorder

of the digestive organs, and that this inflammation is curable by means which correct the latter disorder, could be proved by numerous and indisputable cases; yet it is not necessary to adduce them, because the public opinion seems already decided on this subject. If, then, numerous and very dissimilar diseases may result from the same causes, is it not probable that they are adequate to produce every variety? It must, however, be admitted, that these may be hereditary predispositions to certain diseased actions. We have instances of gout occurring in very early childhood; and it is also highly probable, that unhealthy states of the circulating fluids may conduce to excite peculiar morbid actions.

CASES.

SECTION V.

On Diseases of various Glands, arising from Disorders of the Constitution.

I HAVE also observed that diseases of particular organs seem to originate, in many instances, from disorder of the system in general. The testis of the male subject, and breast of the female, have furnished me with examples of this observation. In the cases to which I allude, the testes were alternately affected, enlarging considerably, and then subsiding.* I have met with numerous and interesting cases of such diseases of the breast; however, the relation of a few will be sufficient to inform the reader of all that I know concerning this subject.

CASE XXII.

A lady came to London, to submit to the removal of a diseased breast, if it should be judged necessary. The disease had existed for more than two years. The breast of the affected side was one-third larger than the other; indurated in several parts; and so much enlarged and hardened in one place, that this might have been taken for a distinct tumour on a hasty and inattentive examination.† This part

* The cause which excites and maintains alternate irritation and disease of the testes, generally resides in the urethra; but there was no disease of that part in the cases which I now mention. The patients first became unhealthy, and disorder of the testes followed. Similar affections are not uncommon in pseudo-syphilis.

† It may not be improper to observe here, for the instruction of the younger part of the profession, that if a breast containing a portion which is particularly indurated be examined by the points of the fingers placed circularly, the disease will feel like a separate tumour; but if the flat surface of the fingers be moved over it, its true nature will become manifest.

was situated near the margin of the pectoral muscle. The disease had resisted the various means employed with a view to disperse it, such as leeches, lotions, mercurial ointment, &c.

It was occasionally painful, and caused the patient so much mental anxiety, that the surgeon, who attended her in the country, thought it should be removed. The mammary gland of the opposite side was far from being in a perfectly healthy state; which circumstance appeared to forbid an operation, since the same disease might take place afterward in the opposite breast. The patient's general health was much impaired, her tongue was furred, her appetite deficient, her digestion imperfect; the biliary secretion was disordered, and the bowels costive. I ordered her to take a compound calomel pill every other night, five grains of rhubarb half an hour before dinner, and the infusion of gentian with senna, so as to procure a sufficient evacuation of the bowels daily. Linen, moistened in water, was applied to the part in the evening, or when it felt painful and heated. This plan of treatment reduced the bulk of the diseased gland by at least one-third in the course of a fortnight. The patient went afterward into the country, still employing the same medicines; and was entirely free from the disease in three months, though she felt occasionally shooting pains, which probably indicated that her health was not completely re-established.

CASE XXIII.

A lady consulted me on account of a considerable swelling of the breast, attended with much pain. It had come on suddenly, and had been painful about a week; but she thought that a lump had existed previous to this time. The principal tumour was on the side next the sternum, and was as large as a hen's egg; it seemed to be distinct; yet there was a general swelling, with partial induration of the substance of the gland. The tongue was furred, the bowels costive, and the pulse frequent; and she was, to use her own expression, very nervous. I directed her to use the same means as

were mentioned in the preceding case. Small doses of mercury act beneficially on the bowels, by inducing regular and healthy secretions ; and I know no better method of administering it as a discutient. The general induration of the breast and tumefaction of the integuments subsided quickly under this treatment, and left the lump in the same state which I supposed it to have been in before the attack of general swelling and pain. In another week this apparently distinct tumour was flattened on its surface, diminished in size, and confused with the substance of the mammary gland. Its form varied each successive week ; it first became oblong, and afterward seemed to separate into two parts ; but in less than six weeks no trace of it could be felt.

CASE XXIV.

A medical man, who resides in the country, brought his daughter to town for advice. She had apparently a tumour in her left breast, between the nipple and the axilla ; in which part she had felt a good deal of pain. The swelling was of very considerable size, and the breast so tender, that I could not exactly make out whether it arose from distinct tumour, or from a partial enlargement of the mammary gland. Want of time prevented the patient's father from showing the case to another surgeon. I could only give him this opinion ; that in the present circumstances no one would think of an operation. I recommended the application of the *lotio ammon. acetat.* when the part felt heated ; and as the patient had disorder of the stomach and bowels to a great degree, that the chief attention should be paid to the state of these organs. A grain of calomel was directed to be taken every second night ; rhubarb before dinner, and *infus. gentian* and *senna*, if necessary.

About two months afterward, having occasion to be in that part of the country where the patient resided, I called on her. Her father then told me that the swelling had subsided considerably, after his daughter's return into the

country ; and that of late he had not examined the complaint, as she told him she felt no uneasiness from it.

When I now examined the breast, I could not perceive any difference between it and the other. No vestige was left of a disorder, which had been of such a magnitude, as to occasion considerable alarm ; a circumstance that excited the greatest surprise in the mind of her father, who was a practitioner of much experience.*

Before I had paid attention to those complaints which arise from or are aggravated by constitutional causes, I could not have believed that such considerable local diseases, after resisting various topical and general means, should give way so readily and completely to small doses of medicine. It is only by considering the manner in which this effect is produced, that the subject can be placed in a proper point of view.

An attention to the state of the bowels is indispensably necessary, even in the common practice of surgery. A simple cut of the finger frets into a bad phagedænic sore, which resists every local remedy so long, that amputation is at last proposed. This ulcer is the consequence of bad health, which in its turn is aggravated by the irritation of the sore. The patient has a furred tongue, with other symptoms of disordered digestive organs. An attention to this disorder corrects the painful state of the sore, which now heals rapidly under simple dressings.

A patient has a disorder in the urethra, almost too trivial for surgical attention ; yet producing much inconvenience. The functions of the digestive organs are impaired, and he is hypochondriacal. He consults a physician, under whose care his general health is amended, and he no longer feels or thinks of the local disease.

* I have also known cases of induration and suppuration of the salivary glands, apparently caused by the same general disorder, and cured by the same treatment.

An erysipelatous inflammation of the leg is imputed to some trivial cause ; as for instance a gnat-bite. It becomes worse under the common remedies. The health has been long declining, and the chylopoietic viscera are obviously deranged. The erysipelas is quickly cured by medicines prescribed for that disorder.

A patient has a trivial sore on his leg which the surgeon finds a difficulty in curing by the usual methods. The patient feels indisposed, and has a manifest disorder of his digestive organs. The sore begins to slough, and becomes very painful. The disorder of the stomach and bowels is augmented ; so great is the indigestion, that the small quantity of food which the patient thinks it necessary to swallow for sustenance, feels weighty and uncomfortable in the stomach ; and the vegetable food becomes almost corrosively acid. Opium fails to procure sleep, or even to give ease. When the mortification has spread so as to occupy almost one-fourth of the integuments of the leg, many very copious pultaceous stools of a greenish-brown colour are discharged from the bowels in the course of the night, and the patient's feelings undergo an entire revolution. Before this, the stools procured by medicine were watery and dark coloured. The patient now sleeps like one long harassed by pain and watching ; his stomach is tranquil, and willingly receives aliment, which now produces no uneasy sensations. The skin, which had been hot and dry, becomes moistened with a gentle perspiration, and the pulse beats with its natural frequency, and in a tranquil manner. The effects of this favourable crisis being maintained by medical treatment, the sloughs are thrown off, and the sore heals with a rapidity indicative of considerable vigour of constitution, and further demonstrative of the sloughing not having been the effect of vascular weakness, but of nervous irritation. I could relate numerous cases of erysipelatous inflammation terminating in sloughing, in which the disease arose from a similar constitutional cause.

In order further to elucidate this subject, I subjoin the chief circumstances of a case which occurred since the publication of the second edition of this book.

A gentleman who once had a pimple on his leg spread by sloughing, so as to produce a considerable chasm both in circumference and depth, was much alarmed when another equally trivial complaint manifested the same disposition. He was at this time in London on a visit, and desired me to attend him. The patient was about 50 years of age, and a robust healthy-looking man; his pulse was remarkably vigorous, and in all respects right; his tongue was slightly furred and his bowels regular. To me his apprehensions seemed unfounded; he was however confined to a sofa, and a linseed poultice applied for nearly three weeks, without any augmentation of the disease, or any separation in the circumference of the eschar. The slough had split into portions, and a fetid matter oozed from it; at that time the poultice was changed to one made with stale beer, with a view to excite a little action in the indolent parts. It produced, however, irritation, and in one night the sloughing of the integuments increased to one-third more than its former extent. The linseed poultice was again employed, and after some weeks were elapsed, as no separation had occurred in the circumference of the slough, and it appearing penetrable by medical applications, weak acids, infusions of bark, diluted spirits, and resinous tinctures were tried, to learn the effect upon the slough and contiguous parts; some of the slough had by this time separated, and new flesh of no unhealthy appearance presented itself beneath the sloughing part, which extended no deeper than the skin. None of the applications seemed of any material benefit, and any thing of an irritating nature appeared to produce irritation, with a slight increase in the circumference of the slough. As the sloughing of the skin seemed to be the effect of disease extending in it while the cuticle was entire, and when, consequently, no application could have any peculiar effect, but would act as a simple stimulus; and as all stimulants appeared injurious. I content

ed myself in future with the application of the linseed poultice and simple dressings. Under their use the sloughing of the skin continued to spread during a period of about six months, when the patient died.—The disease began about the middle of the tibial side of the leg, and extended towards the front and outside till it occupied about three-fourths of its circumference; it extended also towards the ankle, and to within about two inches of the upper end of the tibia. At one time it spread by a dusky-coloured inflammation, suddenly occupying a considerable extent of skin, yet in this district there were parts more discoloured, and presenting an appearance similar to that arising from the transudation of blood from the veins in dead bodies. The parts so discoloured first sloughed, leaving several insular portions of skin, still preserving its vitality. Some of these portions slowly perished, others never completely mortified. At other times the mortifications spread slowly, and merely from the circumference, without any previous disease in the skin being apparent: every new extension was preceded by constitutional disturbance: and when the patient felt well and was tranquil, the disease continued stationary at times for a fortnight or three weeks. As the sloughs successively separated in the order in which they took place, a healthy granulated surface appeared beneath them, which cicatrized; and cicatrization also taking place from those portions of skin which did not completely perish, the sore healed with more than usual celerity, so that a short time before the patient's death, there was much less slough and appearance of disease than at former periods. Having described the local treatment of this unfortunate case, I have only to relate the circumstances observed relative to the system at large, and the medical treatment which was instituted. The patient had been accustomed to eat a well-cooked dinner, and to drink a liberal quantity of wine afterward. About four months preceding this attack, he had very much diminished his quantity of wine; and from this time he thought that he became nervous and uncomfortable. His nervous feelings were manifested by

anxious looks and inquiries, and by impatience to have things done at the moment and in the manner he wished ; he was also apprehensive and solicitous about others in cases which warranted no such feelings. He was thirsty, and generally had a tumbler of water on the table, which he supped occasionally, though he did not indulge himself in drinking it. He ate his breakfast and dinner with appetite, and in moderate quantity. His bowels were regular ; and the biliary discharges, although not right, were not materially otherwise. The first attentions were paid to the digestive organs, in the manner described in the introductory remarks ; but when the mortification was extending, nitric acid and bark were exhibited. When the bark was increased to a moderately large dose in order to ascertain whether it was likely to be of service to the local disease, it rendered the patient slightly feverish, increased his thirst, and caused the tongue to become dry and brown. These medicines were changed for cordials, as camphor, julep, with aromatic confection, which seemed to answer better. Opium was tried, and seemed to be beneficial in moderate doses, administered at regular intervals ; but in larger doses it seemed injurious. The patient throughout suffered very little pain, and slept well, except at those times when a temporary disturbance of his health, that has been mentioned, occurred. At those times also the white part of the eye assumed a yellowish tint, and there was an expression of languor and disquiet in his countenance ; as cordials agreed with him, a liberal quantity of wine was permitted ; nevertheless he gradually became feebler and his flesh wasted, whilst his belly enlarged ; of this enlargement he took notice himself ; it first appeared to be merely tympanitic, but subsequently water was evidently effused. The right foot and ankle became considerably œdematous ; of the left or diseased limb they were but slightly so ; he had but little pain, and talked of returning into the country ; he was good-humoured and cheerful almost to the last. A short time before his death his memory failed, and he thought but little even on his own case. At last he was seized with profuse diarrhœa,

consisting of watery discharges, and being exhausted, he slept during the last twenty-four hours of his life.

Now, that the sloughing was not in this case the effect of vascular debility, I infer, not only from the state of the pulse, but from the rapid healing of the sore : that his nervous system was merely disordered and not diseased, was to me sufficiently evident. Although I was extremely desirous of examining the body, I was not permitted to do so.

I will briefly relate the principal circumstances of two cases of the same kind of disease, which occurred since the publication of the last edition of this book.

A gentleman about 66 years of age, who had been accustomed to live luxuriously though not intemperately, came from the country to spend a little time in London. Shortly after his arrival he had a small irritable inflammation on the back part of his leg, which terminated in sloughing, and had extended itself, before I saw him, to an oval district about three inches in length and two in breadth. The patient's pulse was strong, firm, full, and regular ; his tongue furred, his stomach weak and flatulent, the biliary discharges faulty, and his bowels needed excitement. He was desired to keep constantly in bed with a linseed poultice applied to the part. His diet and bowels were regulated ; he took five grains of pilul. hydrarg. every second night, and camphor mixture, with aromatic confection, was also given occasionally when the patient had a disturbed night and starting. In the limb, the skin round the slough acquired a dusky colour, and shortly after perished. Yet when his nights were tranquil, the skin surrounding the slough was pale, and manifested no disposition to separate from the perished part, even though a considerable time might elapse without any extension of the disease. By successive fits of irritation and sloughing, the disease spread, in about three months, to the extent of nine inches in length, and five in breadth. The sloughs had separated in the middle of the area, and healthy granulations had sprung up. The patient's health had however considerably improved during this interval, and I now resolved to make gentle pres-

sure on the skin surrounding the disease, by strips of plaster applied like the many-tailed bandage, in order to prevent the peculiar inflammation, or turgid state of vessels which preceded the mortification, from occurring in the circumference. The sore and sloughs were washed with water slightly acidulated with nitric acid ; then dusted over with flour, to absorb the discharges, and covered with simple dressings. The limb was then bandaged with sticking-plaster and a calico roller. The result of this treatment exceeded my expectations, for no farther extension of the disease took place. The sloughs slowly separated, leaving beneath them a healthy ulcer which even rapidly healed. The patient returned into the country, and had no recurrence of this disease ; yet did not survive it more than two years.

A gentleman, nearly seventy years of age, who had been accustomed to live freely, had a small sloughing of the skin on the back of the leg, opposite to the upper part of the tendo Achillis. He was confined to his sofa, and shortly afterward to his bed, and linseed poultice applied. His diet and bowels were regulated, and he took 5 grains of pilul. hydrarg. every second night. The slough extended itself progressively round the outside of the leg, till it reached the front of the tibia, and was about four inches in breadth. The sloughs successively separated as they had formed, and left a healing sore. The bandage was applied in this case, and the progress of sloughing was arrested by it ; but it suppressed secretions from the sore, and the limb became so painful that we were obliged to discontinue the pressure. A restless night and constitutional irritation regularly denoted the increase of the mortification ; and I had constantly inquired whether there was any cause to which these paroxysms of disorder and extension of the mortification could be attributed ; when at last, after two months had elapsed, the patient acknowledged that he had at those times considerable uneasiness in the region of the liver. The blue pill was therefore given every night, and sometimes in the morning. From this period the mortification extended no further and the sore healed. The in-

crease of the mercury appears however to have induced so great a degree of languor, that it was left off, and decoction of bark with sulphuric acid administered. This medicine acted as a gentle laxative, and the patient's health much improved during its use. The patient now removed into the country, and afterward went to the sea-side, where another patch of mortification, but of a different nature, occurred in the other leg. The skin of this leg was, to some extent, of a livid hue, and the slough, which was of an oval form and not much larger than a shilling, did not increase. Linen damped in spirit and water was at first applied, and after three weeks, when the living parts had seceded from the dead, and discharge began to take place, poultices were employed; but the sloughing process did not extend as in the other leg. The patient's health had been gradually getting worse, and he had now great difficulty of breathing and diminution of the urinary secretion. By calomel and purgatives this affection was alleviated, but then the mucous membrane of the lungs became affected, and the patient was unable to cough up the mucus. Under these circumstances his skin became purple, and the cerebral functions impaired, so that he lay sleeping, manifesting little intelligence, and died exhausted and partly suffocated.

In cases of mortification, where the skin is entire, stimulants in general hasten the progress of the disease; but when mortification is the consequence of the diseased and painful actions of ulcers, they often do great good, by exciting different and more healthy actions. I wish, on the present occasion, to call the attention of surgeons to the Memoir of M. Delpeche relative to this subject in general, and also to inform them that the practice which he recommends has been tried, with some modification, in St. Bartholomew's Hospital, with success. We did not, indeed, apply the actual cautery, but the pulpy slough was moistened with undiluted nitric acid, till its putrefaction was corrected, and the living parts immediately in contact with it were destroyed. This application gave, indeed, great pain, but afterward there was per-

fect ease, so that the patients were never averse to submit to means by which the constant torment which they previously endured was removed. When the surface of an ulcer became painful in a small district, and lost its healthy colour, the strong acid was applied, even at the commencement of the disease, and its progress thereby prevented. Mr. Welbank, one of the house surgeons who has studied his profession with great diligence and intelligence, at whose suggestion, primarily, this practice was adopted, further observed, that the diluted acid, in the proportion of a drachm to a pint, by correcting putrefaction and exciting healthy actions, seemed to have a beneficial effect, though it caused considerable pain.

A patient supposes that his knee is strained; for pain and inflammation of the joint suddenly come on, with deposition of fluid into the articular cavity; this attack is attended with fever, furred tongue, and unnatural discharges from the bowels. Leeches, cooling washes, poultices, and, in short, all topical applications, are unavailing. It is a case of rheumatic inflammation, for which a physician is consulted. Five or six weeks elapse without any abatement of the disease, the patient being almost unable to stir in bed. An alteration in the health suddenly takes place; the tongue becomes clean, the bowels regular, and biliary secretion healthy; and there is no longer any pain in the knee. All the fluid is absorbed from the joint in two days, and the patient walks about his chamber. Or there may actually have been some local injury; but the consequences are very considerable and violent, and quite incommensurate to the cause. Such occurrences can only be explained by imputing the effects to the state of the health in general.*

A case like that described in the preceding sketch would, I believe, be acknowledged by every one to be dependent on the state of the constitution in general; but I could bring for-

* As operations are injuries, so we ought not to perform them, if it can be avoided, where the constitution is much disordered. I could relate several instances of the wounds made in operations assuming diseased actions from such a state of the constitution.

ward a great number of instances of chronic affections of joints, incurable by local measures, which were evidently cured by correcting those errors in the state of the digestive organs, which were the cause or effect of general disorder of constitution. In diseases of joints, we find three distinct kinds of cases. First, a scrofulous disease of the bones, which ultimately affects their articular surfaces; secondly, an inflammatory affection of the joint, producing effusion of fluids into its cavity, and ulceration of the cartilages and ligaments; and in this case, the most perfect rest, and most strenuous efforts by local means to put a stop to inflammation are requisite: and, thirdly, an inflammation dependent on constitutional causes. This inflammation is sometimes of an active and painful nature, and sometimes of a more indolent and chronic character; but whatever form it may assume, it is less prone to injure the structure of the joint, and little susceptible of cure by local measures, whilst it yields to those means which tend to improve the health in general. When a diseased joint is so situated as to become an object of examination, these circumstances will be sufficiently evident. I am induced to mention them chiefly on account of such variety of affections occurring equally in the hip, as well as in the other joints, in which case the benefit accruing from different modes of treatment is less demonstrable to the sight and touch.*

* As I know of no treatise on diseases of the hip in which this distinction of cases is made; and as, from what I have seen, I cannot but consider the subject to be very important; so I think I should do wrong to forego the present opportunity of relating as succinctly as possible two of a considerable number that have come under my observation, in order to excite attention to this subject.

CASE I.

A boy about twelve years old was sent from school to London, being supposed to have a lumbar abscess. There was a considerable collection of fluid beneath the fascia of the thigh; but it received no impulse when the patient coughed. The boy limped in walking as if he had a diseased hip, scarcely bearing on the affected joint. When pressure was made on the front of the orbicular ligament, it gave him acute and considerable pain. He was kept perfectly quiet in bed, blood was taken by leeches repeatedly from the integuments opposite to the inflamed joint, and linen wet with diluted aq. ammon. acct. constantly applied,

the pressure no longer occasioned pain. A blister was then applied over the joint, and the cuticle being removed, the sore surface was dressed with savine cerate. This dressing produced considerable inflammation and ulceration beyond the blistered part, and caused the surface of the skin which had been deprived of its cuticle to mortify. Near a month elapsed before the sore healed. At this time no fluid was discoverable beneath the fascia; no uneasiness was felt when the joint was compressed; and the boy could not be prevented from getting up, because he felt as competent to walk about as before the occurrence of his disease. He went to school again in the country, and after two years was put into a merchant's employ, in which situation he was obliged to be constantly walking about the town. He then again became lame in the same manner, but not to the same degree. There was, however, no effusion of fluid beneath the fascia of the thigh. A month's rest, with similar treatment, seemed to have cured this relapse, and I then told his father that he must change the employment of his son; observing, that though the joint might recover sufficiently to endure common exercise without injury, it was not to be expected that it would ever be able to sustain violent exertions with impunity. I urged him, also, to let me know immediately if there was any return of lameness. About three months afterward I met the father and his son in the street, and observed that the youth limped in walking very much. I asked why I had not been informed immediately, as I had requested, of the return of lameness; and further inquired, whether the boy still continued in the same situation. Being told that he did so, I felt so much hurt at the cruel and absurd conduct of his father, that I declared I would no longer interfere in their concerns, nor was I asked to do so.

All that I can further relate of this case is, that a large abscess formed and broke behind the trochanter, and that I once afterward saw the poor lad lying in St. Bartholomew's Hospital with his thigh-bone dislocated, in consequence of the destruction of the ligaments of the joint.

CASE II.

A young lady of a delicate and susceptible constitution, who had suffered much uneasiness of mind on account of some of her friends, became so excessively lame in the left hip that she could not move a few steps without support. Pressure on the front of the joint occasioned considerable pain. Her tongue was much furred and her bowels greatly disordered, and she had fits of agitated and difficult respiration. I recommended nothing but tepid fomentations to the hip, and explained to her physician what I thought would be right to be done with regard to the state of the digestive organs.

As she became better in health, her power of moving about increased, and she went to the sea-side. After two years there still remained some tenderness when the hip-joint was compressed, and some thickening of the parts which covered it. She, however, eventually got well, though no local applications of any moment were made to the diseased parts. I need scarcely add, that the means employed in the first case, with such striking success, would have been prejudicial in the latter, whilst those which were serviceable in the last case, would have been futile and nugatory in the former.

C A S E S.

SECTION VI.

Disorders of Parts which have a Continuity of Surface with the Alimentary Canal.

I HAD formerly observed spasmodic strictures of the œsophagus to disappear under various modes of treatment, in a manner which I did not understand. Mercury seemed to effect the cure in three instances. Many cases have occurred to me lately, in which the irritation in the œsophagus seemed to be first excited and afterward maintained by disorder of the digestive organs. It will be readily allowed, that spasmodic strictures of the œsophagus, when long continued, may cause a thickening in the affected part of the tube, and thus the stricture may become permanent. One instance will be sufficient to illustrate and verify this view of the subject.

CASE XXVI.

A lady, who had been in bad health for many years, and was supposed by her medical attendants to have a stricture of the œsophagus, became at last incapable of swallowing any food, except in very small quantities; she was even then obliged to drink some fluid after each morsel, to facilitate its descent into the stomach. Some mucus and blood rose into the mouth after vomiting, which very generally followed the taking of food. Under these circumstances, I was requested to pass a bougie, in order to ascertain the state of the œsophagus; but I declined this examination, on account of the disorder which existed in the stomach. The tongue was greatly furred; the parts in the epigastric region very tender; the bowels much disordered, the secretion of bile

either very unhealthy, or entirely wanting; every symptom, in short, which indicates an aggravated form of disorder of the digestive organs existing in a striking degree. The stomach and bowels were brought into a better state by such medical attentions as I have already so often described; and the œsophagus partook of this amendment; for moderately sized morsels of food could now be swallowed without the necessity of washing them down by liquids. The general health also improved, and she became fat. But the disorder of the digestive organs, which had been of long continuance, was not completely subdued; she was still subject to relapses, and in some of these the difficulty of deglutition again occurred.*

The throat and mouth are the parts next in order; but it is unnecessary to relate additional cases under this head: some of the instances already recorded will be sufficient to confirm my sentiments on the subject, and the propriety of the practice which I have recommended.

That diseases of the nose may be caused or aggravated by irritation arising from the stomach is a proposition, which will, I think, be readily granted. Indeed it seems surprising that the operation of this cause has been so little adverted to in books of surgery; since the phenomena which prove the fact are so well known. Are the monstrous noses, caused by excessive drinking of vinous and spirituous liquors, to be otherwise accounted for, than by irritation arising from the stomach? And do not worms in children cause a teasing sensation in the extremity of the nose? I have seen, in private practice, several cases of irritation and swelling of the end of the nose, in some instances accompanied with small ulcerations of the pituitary membrane. In these cases, the skin over the nose, which was tumid, became rough and discoloured; the middle of the discoloured part became sound; whilst the circumference retained its morbid actions, the disease there spread in a small degree. In these cases the tongue was furred; and there were evident indications

* This patient has now for more than four years been free from this disorder.

of disorder in the stomach and bowels. The disease was checked, and cured, by attention to this disorder. I was strongly impressed with the opinion, that if these cases had been neglected, they would have terminated in that herpetic ulceration, which so often affects the end of the nose. I have also seen several instances of that herpetic ulceration in its confirmed state more materially benefited by medical attention to correct the disorder of the digestive organs than by any local application; and I feel confident that it may be frequently cured by such endeavours.

I have observed, in all the cases of that noisome and intractable disease, ozæna, which have come under my care lately, that the stomach and bowels have been disordered; and more benefit has been obtained by endeavouring to bring these organs into a healthy state, than by all the local application which had been previously tried. I stated to a medical friend my opinions respecting one patient, who came from the country, and begged to know the effect of the treatment which I had proposed. He informed me, after some months, that he had not been able to succeed in correcting the visceral disorder; and after relating the means which had been used, he adds, "The patient was now attacked with a bilious disorder, to which she had formerly been subject, and for which I gave her six grains of calomel in a bolus, which soon relieved her. During this attack the nose seemed well; there was no fetor in the discharge, and she recovered her sense of smelling." However the disease returned afterward as before.

I have known several instances of persons who have for a long time been subject to polypi of the nose, in which the polypi ceased to grow after some attention had been paid to correct a disorder of the digestive organs.

In further confirmation of the opinion, that diseases of the nose depend much upon the state of the stomach, I shall mention the case of a woman, who had a disease of the nose which I expected would, at least, prove very tedious, and very troublesome, but which got well speedily under simple

dressings, in consequence, as it appeared, from the effect of internal medicines.

CASE XXVII.

This patient was between thirty and forty years of age; had a furred tongue, bowels alternately costive and lax, and the discharges discoloured. An enlargement of the left alar nasi, caused by a great thickening of the parts covering and lining the cartilage, had gradually taken place. The skin was discoloured, and an ulcer, about the size of a six-pence, had formed on the under surface of the ala. The sore was deep, with a sloughing surface, and uneven and spreading edges. Spermaceti cerate was employed as a dressing; and the external skin was frequently bathed with Goulard's wash. She was ordered to take internally five grains of rhubarb an hour before dinner, five grains of the pil. hydrarg. every second night, and the infusion of gentian with senna occasionally. The sore ceased to spread, the swelling gradually subsided, and all diseased appearances were removed in the course of a month. The patient also found her health considerably amended.

In most cases of deafness, there is probably a state of irritation, and a tendency to inflammation, throughout the passages of the ear. The external meatus may be unusually sensible, the secretions being either suppressed, or discharged in an unnatural quantity. The lining of the eustachian trumpet is thickened; and hence it becomes partially obstructed. It must be admitted that such a state of the organ is likely to be aggravated by a cause which maintains or produces irritation in the nose. When dulness of hearing also depends on a torpid state of the nerves, it may be caused by the same circumstance, which is known to affect the sensibility of other nerves.

Indeed, I have remarked that the hearing of many persons has considerably varied with the state of their health in

general ; so that I felt no surprise from the occurrence related in the following case :

A gentleman applied to me on account of some pseudo syphilitic symptoms which I told him would gradually become well. I advised him, at the same time, to be particularly attentive to the state of the digestive organs, which were generally disordered by the effects of the poison. He took five grains of the pil. hydrag. every second or third night. The disorders for which he had consulted me were all removed in the course of two months ; when I received a letter from him, saying that he thought it a duty he owed to me and to the public to inform me, that the lenient course of mercury, which I had recommended, had cured him of a considerable degree of habitual deafness.

It is well known that ophthalmia frequently arises from constitutional causes ; and in such cases the digestive organs are generally deranged. The health will be most speedily restored, and the local disease most effectually diminished, by correcting the disordered state of the abdominal viscera. There is no necessity for enlarging upon this subject ; yet it may be useful to state what I have observed respecting those ophthalmies, which take place subsequently to gonorrhœa, and which have generally been ascribed to a retropulsion of that disorder, or to the accidental application of the discharge to the surface of the eye. In the worst of the cases, which I have seen lately, there was considerable redness and irritability of the eye, lasting nearly a fortnight. The digestive organs were deranged in all the instances to which I allude ; and I attribute the comparative well-doing of these patients to the attention which was paid to their correction. In other cases, which I had formerly been witness to, where evacuations by bleeding and purging, &c. were employed, the disorder was extremely obstinate ; nay, several patients lost their sight.

The cases of ophthalmia connected with gonorrhœa appear to be of two kinds. In the worst case, and that which I have happened to meet with most rarely, there is, I think, reason

to suppose that some of the discharge from the urethra has been accidentally applied to the surface of the eye. This circumstance may be inferred from the copious and puriform discharge which takes place from the conjunctiva, which is continued for about three weeks, and from the disease not yielding to any remedies which usually relieve other ophthalmies. The milder, and, to me, more commonly occurring case, seems to be the result merely of irritability of constitution. With relation to this subject I may mention, that I know a patient who has several times had discharge from the urethra and inflamed eyes alternating with each other; and both apparently arising from constitutional causes. I shall also add the following striking instance of ophthalmia connected with gonorrhœa, in which the inflammation of the eyes can neither be supposed to be the effect of local contamination nor of metastasis.

CASE XXVIII.

A gentleman, having a gonorrhœa, and being in a remote part of Scotland, felt himself obliged to go to the West of England with the greatest expedition. He came to London by the mail coach, and during the journey his eyes became greatly inflamed, and he was much tormented with dysury; he was indeed so ill, upon his arrival in town, as to be unable to proceed on his journey. His eyes were exceedingly red and painful, and the lids tumid. He had frequent and urgent desire to void his urine. The discharge from the urethra was very copious. His tongue was much furred; his bowels had a costive tendency; the stools were blackish and offensive; his pulse frequent, and neither full nor strong, his skin hot and rather dry. He said that formerly, having a gonorrhœa, he had been affected with ophthalmia in the same manner. He was directed frequently to bathe his eyes with lukewarm decoction of poppies; but the chief attention was paid to the state of his stomach and bowels. He took five grains of the pilul. hydrarg. every night, and other medicines

to procure a sufficient alvine evacuation daily. On the third day he had severe rheumatic pains in his shoulder. On the fourth, his knee became affected with rheumatism, and so much swollen that he was incapable of moving about, though his eyes were much better, so that he was able to sit up and bear the window-shutters of his chamber to be left open, which he could not before have permitted. On the fifth day, though better, his eyes were still much inflamed, his dysury troublesome, and he was unable to walk from the rheumatic affection of his knee. The discharges from the bowels had been regularly observed, and they still continued of a very wrong colour, till the evening of this day, when he had a stool properly tinctured with healthy bile. He now felt a sudden and surprising amendment, which appeared equally so to others on the following day; for I found him walking about with very little lameness, his eyes requiring no further attention than wearing a green shade, and he had no dysury. In two days he pursued his journey, nor did he experience any relapse.

There is a chronic ophthalmia, which is, I believe, generally considered to be venereal, probably from the difficulty of curing it, and probably from mercury being frequently beneficial to it. As cases of this description evince how much ophthalmies are likely to depend upon constitutional causes, I shall briefly relate the following to identify the kind of disease to which I allude.

CASE XXIX.

A gentleman had for more than two years been more or less subject to a chronic ophthalmia. When he was very bad, he had twice used mercury for its cure, and with temporary success. The last mercurial course was a considerable one, as the relapse of his disorder was attributed to the insufficiency of the former one. The ophthalmia, however, returned, with as much, if not with more severity than formerly. The eye was extremely red, very irritable, and his

vision very imperfect. I found the patient shut up in a close and dark chamber, from which he rarely ventured to stir, lest he should catch cold. His tongue was furred, and his biliary secretion faulty. I directed small doses of mercury every second night, merely as probilious medicines, and requested him to pay attention that his bowels were kept clear without being what is called purged. I also urged him to go out into the air and use active exercise. By pursuing these measures, the ophthalmy was nearly well in about three weeks. He now either caught cold or fancied that he had done so; his general health became disturbed, and his ophthalmy returned. It got well, however, as the disturbance of his constitution wore off; and though he had two or three times, during a year, some trivial returns of ophthalmy, yet they were always induced by general disorder, and readily got well by measures directed to correct the disorders of the alimentary canal.

That cutaneous diseases* are much connected with the state of the stomach, is generally known. Hence various medicines have been recommended to correct disorders of that viscus, with the view of removing the more evident, but consequent disease of the skin. The account which I have given of disorders of the digestive organs, may lead to a more rational and less empirical treatment, and to the more just appreciation of the value and mode of action of remedies, which are sanctioned by experience. It is almost superfluous to relate any case to authenticate so well known a fact; the following, however, may be found interesting and instructive:

* It may, perhaps, be right to advert to the direct and sudden sympathy which exists between the skin and the stomach. In affections of the latter organ, the skin is dry and cold, moist and cold, dry and hot, or moist and hot; and it suddenly changes from the one to the other condition, as the state of the stomach varies. When the digestive organs are disordered, the irritable state of the skin is manifested by the effects of blisters and other irritating applications. A blister produces a tormenting local disease, and even a Burgundy pitch plaster causes extensive erythema. Indeed, when the constitution is irritable, all the modes of counter-irritation, which surgeons employ under other circumstances with success for the cure of local diseases, are likely to do harm; and thus these curative methods obtain discredit in consequence of their ill-timed employment.

A patient in St. Bartholomew's hospital had an herpetic disease of the skin. This had healed in the middle, and spread in the circumference to such a degree, that it occupied nearly the whole length of the leg, and included two-thirds of its circumference. The skin had recovered a moderately sound state in the centre. The disease was propagated in the circumference by an ulceration, which threw out a projecting and firm fungus of a tawny colour, of about half an inch in breadth. A small groove or channel separated this fungus from the surrounding inflamed skin which had not yet ulcerated. A similar disease occupied the back part of the arm; this was of an oval figure, and resembled, in every circumstance, that which I have already described upon the leg. These diseases had existed for nearly two years, and continued to spread in opposition to every mode of treatment. Mercury had been employed, even to salivation, without any marked alleviation of the local complaint. I immediately perceived that the digestive organs were greatly deranged: upon correcting this disorder, the skin surrounding the disease became pale; and all disposition to spread ceased. The fungus, however, still projected, and did not heal; it was therefore dressed with a weak solution of kali arsenicatum. This remedy seemed to subvert the diseased actions which had produced the fungus, so that in less than two months the patient was discharged from the hospital perfectly well.

I have seen similar herpetic diseases, of much less extent, succeed to the absorption of matter from sores upon the genitals. These have got well when the patient has gone into the country, and appeared again when he has returned to town. They have healed under a course of mercury, and broken out again when it was discontinued.

In this review of disorders, occurring in parts having a continuity of surface with the digestive organs, I have traced them from the stomach as from their source. Another set of diseases may originate from the same cause. The large intestines suffer more in advanced stages of these disorders than the smaller ones; hence disorders of the rectum, and

particularly many irritable diseases about the orifice of that bowel, are deducible from this cause. I shall not, however, prolong the account by the relation of cases ; but content myself with assuring the reader that the opinion has been derived from facts, and not from preconceived notions of the operation of such disorders.

I subjoin to this section a case to show how irritation in the vagina and contiguous parts may be connected with disorders of the digestive organs. Cases of considerable discharges from that canal frequently occur in children, and which I believe to depend chiefly on constitutional causes. Disorder of the digestive organs induces dysury, and from the urinary organs the irritation may be communicated to the vagina. Mucous membranes in general are also processes of the skin, and the former are liable to be affected by the same causes which are capable of disturbing the latter.

Previous to the history of the case, I shall add a few observations as to the different meaning of the words disorder and disease, which, I believe, have been generally used indifferently, being considered as synonymous. When I first published these observations, I then wished to have defined these terms, and to employ them strictly according to the meaning I should attach to them ; but I forbore doing it, thinking it might be construed into mere affectation. Disorder, I should define to be an unhealthy state of the feelings or functions of parts, without any apparent alteration of structure : and disease, a visible alteration in the appearance or structure of the affected part. Disorder is nervous ; disease is the effect of vascular actions, excited by nervous disorder : an organ may become diseased to a certain degree, and yet, disorder ceasing, its feelings and functions may be natural and healthy, yet disease must have a tendency to establish disorder. That disorder alone will destroy life, is proved by numerous facts : our chief attention should therefore be directed to the tranquillizing of the nervous system, with a view to prevent the occurrence of disorder, which, continuing, may lead to the production of disease. If, however, disease be already es-

established, the same attention must be continued, to prevent its increase, and to relieve that nervous disorder which has produced it, and is attendant upon it. Though the facts proving that disorder alone may be fatal to the individual, are not uncommon, yet I think it may be right to relate one case to show distinctly what kind of cases I am alluding to.

A female child, five years of age, having disorder of the digestive organs, had also discharge from the vagina and dysury; afterward several sores formed about the labia pudendi, which were foul and fretful, and did not heal under any of the applications that were tried. The tediousness of the case induced the parents and medical attendant to wish for an additional opinion. Being consulted on the case, I suggested some unimportant alteration in the local treatment, and urged particular attention to diet, and to the regulation of the functions of the bowels and biliary secretion, which was extremely wrong. The sores after a little time became materially better, but the disorder of the digestive organs rather increased; when, after the child had for several days discharged nothing from the bowels but a substance resembling clay in consistence, and of a slate colour, it died suddenly of nervous disorder.

The body was very attentively examined, and though the alimentary canal was slit open throughout the greater part of its extent, no morbid appearance could be discovered; the other abdominal and pelvic viscera were alike sound in structure; the gall bladder was greatly contracted, appearing as if it had contained no bile for a considerable time: not the slightest morbid appearance could be observed in the examination of the brain, which was made with the greatest attention.

SECTION VII.

IN this section I shall mention what information I have obtained by dissection, relative to the causation of other diseases by those of the digestive organs. The reciprocal sympathy which exists between the brain and the digestive organs, is generally admitted; but the kind and the degree of the effects arising from this sympathy, is not, perhaps, in general sufficiently understood. These organs mutually increase each other's disorder, till the affection of the sensorium leads to the greatest disturbance of the nervous functions, and even those of the mind.

All this may happen without any visible disease of the brain. Dr. Kirkland particularly directed the attention of medical men to nervous apoplexy; and the observations which have been made since his time, have proved, that not only a general derangement of the functions of the nervous system producing apoplexy, but also partial effects of a similar nature, causing hemiplegia and paralysis, may take place without any visible change of structure in the brain. I have met with numerous instances of this kind, but could not determine whether the affections were merely nervous, or whether they were produced or aggravated by disorder of the digestive organs. I only know, that the patients died affected by apoplexy, hemiplegia, or more local paralysis, without any derangement in the evident structure of the brain. I may also mention, that I formerly examined the brains of three persons who died in a comatose state, in consequence of the metastasis of rheumatism. In these cases no morbid appearance was observed in the brain, except some slight marks of inflammation of the pia mater. It therefore appears clearly to me, that disorder and a considerable diminution of the nervous functions may take place, without any organic affec-

tion of the brain. The perfect recovery of patients, which sometimes happens, after such disorders, may also be considered as additional evidence of there having been, in such instances, no organic disease of the brain.

There can be no doubt but that epilepsy may in like manner take place without any morbid alteration of the structure of the brain or its membranes. Some of the persons whose heads were examined, without the discovery of any disease of those parts, had been subject to attacks like those of epilepsy. Dr. Henry Fraser has, of late, published a decisive instance in proof of this fact. A patient died of epilepsy, and his brain was examined with particular attention by Mr. Cooper, without any morbid alteration of structure being discovered.* In general, however, morbid appearances are evident in the brains of those persons who die of epilepsy. Tubercles are most frequently met with. There is, however, a disorder of structure which I wish briefly to mention, as I do not find that it has been noticed. In two persons, who died of epilepsy, I found the medullary substance of each hemisphere altered from its natural structure; it had lost its natural firmness, and smoothness of surface, and appeared like thick curdled cream.

Now, if disorder of the digestive organs is capable of causing or aggravating nervous disorder, even to the production of those effects which have been mentioned, when there is no alteration of structure; it must be granted that such a state of irritation of the sensorium may lay the foundation of an excitement of the vascular structure of the brain, and thus very frequently produce organic disease. When this has occurred, it will aggravate and establish the nervous affection, and thus perhaps render it insusceptible of cure.

Such are the general observations which I have made, by means of anatomical inquiry, relative to these subjects. With respect more especially to the investigation of my present object, I have examined the bodies of six patients,

* See Fraser on Epilepsy, page 39.

in whom disease most certainly began in the abdominal viscera, and was continued in them to the conclusion of their lives. Nevertheless the patient seemed to die rather of nervous disorder, than of disease of the parts first affected. One of the patients died affected with apoplectic symptoms, and five with hemiplegia.

In all these cases the liver was greatly diseased, and the bowels also exhibited diseased appearances. In three of the cases there was considerable inflammation of the membranes of the brain; and a good deal of water in the ventricles. In two of them no morbid appearance of the brain was discovered. I have also examined a child, who was supposed to die of hydrocephalus, accompanied by great disorder of the stomach and bowels. In this case the bowels were inflamed, the liver sound, and the brain perfectly healthy in appearance; yet there had been so great a diminution of sensation and motion, as to leave no doubt of the existence of hydrocephalus. I am aware, that great opportunities of observation, accurate attention to the history of diseases, and anatomical examination of fatal cases, are requisite to enable us to form just notions relative to the present subject. I thought, however, that it might not be improper to state what had been the result of my own inquiries by dissection, in order to promote a more general attention to the subject.*

When my attention was first directed to the subject of sympathetic affections of other organs, caused by disorders of those concerned in digestion, my primary object was, to endeavour to ascertain by dissection, how far pulmonary diseases originated from such a source. I have, in the course

* In exhibiting the subject in the manner which I have done, with a view to the investigation of the cause of nervous affections, I do not mean to deny that nervous disorder and consequent disease, may not sometimes be the primary cause of the symptoms with which patients are afflicted, or that we do not frequently meet with cerebral diseases in the common course of our anatomical examinations. In my opinion the public are much indebted to Dr. Abercrombie, of Edinburgh, who has manifested so much literary as well as personal research, for displaying this subject in an opposite point of view, with such perspicuity and talent.

of my inquiries, had several opportunities of examining the bodies of patients who apparently died of phthisis, combined with diseases of the digestive organs. In these cases both the history and dissection tended to prove, that the chylopoietic viscera were the seat of the greatest and most established disease, and that the pulmonary affection was a secondary disorder. The liver was greatly diseased, and the lungs were also beset with tubercles; yet a considerable portion of those organs was sound. But dissections can never conclusively ascertain the truth of the opinions which I have stated; for the same disposition to disease existing in the constitution may equally affect both the pulmonary and digestive organs. Nay, observations made in dissection in general, would tend to disprove the opinions alluded to; for diseases of the lungs are very commonly met with in dead bodies, while those of the liver and bowels are much less frequent. Yet considerable disorder of the digestive organs does exist, and may continue for many years without any organic disease being apparent: it is possible, therefore, that such disorder may excite disease of the lungs, and thus produce a worse disease in the latter organs, than what existed in the former. In short, the opinions, which I have delivered, cannot be either ascertained or refuted by anatomical researches alone.

Accurate attention to the state of the digestive organs may determine this important subject, and lead to the prevention and cure of the sympathetic diseases which I have mentioned. The attention alluded to is not of that general kind, which adverts only to the quantity of the ingesta, and the periodical expulsion of the egesta, but one that more strictly observes whether the viscera are free from irritation, and whether their secretions are healthy or otherwise. My opportunities of acquiring practical information on this subject must necessarily have been very limited; yet I have seen many cases, which, to me, appeared to prove, that pulmonary irritation sometimes proceeds from disorder of the digestive organs. In cases of surgical diseases, accompanied by dis-

order of the digestive organs, I have also occasionally observed a cough attended with expectoration to cease, upon the correction of the disorder of those organs.

A case which happened about five years ago, strongly impressed these opinions on my mind. A servant of mine told me, that his wife was dying of a consumption, which had been rapidly increasing for six months, and had baffled all attempts to relieve it. Thinking that I could procure her some medical assistance from the hospital, I went to see her. The case, however, seemed past hope. She was extremely emaciated; her pulse beat 140 in a minute; her face was flushed; she had a most distressing cough; and spit up more than a pint of mucus mixed with pus and streaked with blood, in twenty-four hours. The circumstance, however, which most disturbed her, was a continued purging of black and offensive matter. She told me that her bowels were first disordered; that an unhealthy state of those organs had preceded the pulmonary affection, and was indeed habitual. I thought it unnecessary to trouble my medical friends in so hopeless a case; and ordered some pills, containing one grain of opium, to be taken in such quantity as was necessary to stop the purging. As she informed me that the disorder began in the bowels, I added to each pill half a grain of calomel. By these means the purging was so much checked, that she did not find it necessary to take more than two pills in twenty-four hours; and when she had taken twelve, the mercury, very unexpectedly, affected the mouth. From that period, the stools became of a natural colour and consistence; the cough and expectoration ceased; and she was soon sufficiently recovered to go into the country; from whence she returned apparently in good health.

Now if it were to be ascertained, that pulmonary irritation, which might of course produce pulmonary disease, sometimes arises from disorder of the digestive organs;* it

* In the second part of my surgical and physiological essays, in which I related experiments made with a view to ascertain the functions of the skin, I

would be right to inquire further, whether it produces such effects, by the nervous disorder it occasions, and by its operation on the health in general; or by means of a more immediate sympathy existing between the pulmonary and digestive organs. I do not mean to insinuate, by what has been said, that pulmonary diseases do not arise originally and idiopathetically; but only to suggest that they may arise sympathetically, or in consequence of disorder of the digestive organs. The proportionate number of cases, in which they originate in this manner, can only be determined by very extensive experience. That the stomach and bowels are disordered, during the progress of phthisis, will, I conclude, be readily admitted; and that an attention to correct such disorder is requisite, must be acknowledged, from what has been said relative to the influence of such treatment upon various local diseases.*

The actions of the heart seem to me also to become disordered from sympathy with the stomach. That palpitations, and feeble or intermitting actions of that organ, arise from this cause, is proved by their ceasing, when the state of the stomach becomes changed. The palpitations which take place after eating, in cases where the heart is irritable, further evince the sympathy which exists between these organs. Surgeons are occasionally consulted on cases of palpitations of the heart, which the patients mistake for aneurisms; and I have seen many instances, where a great degree of palpitation led to a belief, that some organic affection existed. This has ceased on an amendment of the general health,

mentioned that as it was manifest the skin and lungs were both engaged in the function of throwing forth carbonic acid gas, it followed, that when, from vicissitudes of the atmosphere or weakness of the sanguiferous organs, the circulation and secretion of the skin were much diminished, the lungs would be liable to plethora, and have to perform more than their ordinary duty, which circumstances were likely to induce irritation, and perhaps consequent disease of those organs. Those experiments, as they are not of practical importance, I shall not reprint.

* As the eighth pair of nerves supply the stomach, lungs, larynx, and pharynx, sympathetic diseases of these parts may also reasonably be expected.

apparently arising from an amelioration of the state of the digestive organs, and the patients have continued in perfect health. I have not collected any accurate narratives of the cases that I have seen : none at least which I could properly present to the public as a proof of the fact. There is nothing, however, of which I am more perfectly convinced ; for I have felt it to be true in my own person. After considerable and unusual fatigue, I was seized with pain, and a sensation of coldness in the region of the stomach. I had no appetite, and the biliary secretion was suppressed. Whilst this disorder continued, which was for many weeks, my pulse intermitted very frequently, and I was distressed with hypochondriacal sensations. Upon an alteration in the state of the digestive organs, and a renewal of the biliary secretions, which happened very suddenly after taking five grains of the pil. hydrarg. my pulse became perfectly regular, and my mind tranquil.

The observations which I have made in surgical cases, lead me also to attribute many hæmorrhages, and particularly those from the nose, to a sympathetic affection of the heart and arteries, excited by disorder of the digestive organs. Indeed the whole capillary system of the body seems evidently to be sympathetically affected by the stomach.

If such a state of the system in general, as I have described, and which is manifested by circumstances denoting the digestive organs to be in an unhealthy state, and the nervous system to be likewise disordered, may, in some instances, cause various local diseases of parts not essential to life, the care of which custom has consigned to the surgeon ; and may, in other instances, produce disorders of organs essential to our existence, the care of which is allotted to the physician ; the subject must be allowed to be of the highest importance. Of late, indeed, I have been inclined to consider these circumstances as the cause of the complicated diseases which are met with in man, so much more frequently than in animals. In man the brain is more sensitive, and liable to be disordered by mental affections. In man the

digestive organs are liable to be disordered by stimulating and unnatural diet. Sedentary habits and impure air cooperate to aggravate these disorders. The affections of the brain and digestive organs mutually increase each other; and thus a state of constitution arises, which is productive of the most general and complex diseases. But even these do not seem to me to be the most calamitous terminations of such causes. The disorder of the sensorium, excited and aggravated by the means which have been described, frequently affects the mind. The operations of the intellect become enfeebled, perplexed, and perverted; the temper and disposition irritable, unbenevolent, and desponding; the moral character and conduct appears even liable to be affected by these circumstances. The individual in this case is not the only sufferer, but the evil extends to his connexions and to society. The subject, therefore, appears to me of such importance, that no apology need be offered for this imperfect attempt to place it under general contemplation.*

I have endeavoured to show in the introductory observations, that a state of nervous disorder and a disorder of the digestive organs, may reciprocally produce each other; and that when both occur, they become mutually increased, and thus derange the constitution in general, so as to prove the exciting or predisponent causes of numerous dissimilar and important local affections. I shall, in conclusion, for the reasons mentioned in the preface, offer the opinions which the consideration of the foregoing and similar cases have impressed on my mind. When I find in diseases that the functions of the digestive organs are impaired and disturbed, I consider this disorder as the cause or effect of a more general derangement

* The ancients, who formed their judgment of the nature of disorders by observing the excretions, denominated an irritable and desponding state of mind, *Hypochondriasis*; and when a more fixed and irrational dejection took place, they deemed it an *atrabilary* disorder, and called it *Melancholia*. There can be no doubt of the correctness of their observations; for if the disorder began in the nervous system, it would generally produce and become aggravated by that disorder of the digestive organs, from which they denominated it.

of the system at large. When it seems to be the cause, and when it can be speedily corrected and removed, then the relief and cure of those local diseases which may have taken place, is in many instances so sudden and surprising, that I think it impossible to consider the disorder of the general health, and the local disease, in any other relation but that of cause and effect.

The cure of local diseases by means that cannot be supposed to act otherwise than by correcting errors in the functions of the digestive organs, incline me to differ in opinion from those who consider the local diseases alluded to, as the effect of impurity of the fluids, and to coincide with others, who consider them as the result of general irritation, frequently induced by that of the abdominal viscera.

When I see the same local diseases removed by the same means, though more slowly, I do not wonder at the tardiness of the cure; and perceiving that the amendment of the local disease is proportionate to that of the health in general, I feel warranted in forming the same opinion as to the mode in which the cure is effected. When I see local diseases disappearing and reappearing as the constitution in general is tranquil or disturbed, I feel confirmed in my opinion concerning their origin.

If the actions of any part of the body be excited and increased by accidental causes, it may reasonably be inferred that in a state of health they will be simple and common, unless the stimulant be of a peculiar nature; but if the actions be specific and diseased, we may naturally conclude that the cause of their becoming so is constitutional. The occurrence of similar local diseases in different parts of the body, furnishes an additional proof that the cause of such diseases is constitutional.

It must indeed be very difficult to ascertain the causes of the peculiarities of local diseases; but when I see such a variety of them cured, sometimes suddenly, by means which tend only to tranquillize and invigorate the constitution, I become confirmed in the opinion that a similar state of health may lead to the production of dissimilar local diseases.

I have further observed, with respect to this subject, that persons who have been out of health, but with no other distinguishable errors in their constitutions than such as I have described, I mean nervous weakness and irritation, with a marked disorder in the functions of the digestive organs, have been liable to a succession of dissimilar local diseases. In such instances, I have seen in succession enlargements of absorbent glands, biles, rheumatic affections of joints, and dysury : yet all local diseases have ceased as the health became re-established, by attention to correct the disordered functions of the digestive organs. I have seen also in the same patient enlargements of absorbent glands, rheumatic disease of a joint, and an eruptive disease of the skin, which have all equally got well as the general health improved, by similar medical attention. Nay, the continuance of local diseases, in some instances, after the disorder of the constitution has been relieved or cured, does not, in my opinion, invalidate the foregoing conjectures respecting their origin.

Local diseases, however induced, may have become established by habit, or continued from that state of disorder into which they have reduced the part that they have attacked. A local disease, however excited, may, as we know from experience, be of such a nature as that its actions never cease, and as we have not succeeded in curing. I allude to cancer, which occurs, in conclusion, in such constitutions as I have endeavoured to describe.

It has been said, that I have been hasty in drawing these conclusions. Yet, as may be seen in my first publication, I mentioned, in speaking of disorder of the digestive organs as exciting or aggravating nervous irritation, and thereby causing local diseases, it followed that the nervous irritation might exist, and produce disease, without this usually exciting cause. I then, too, brought forward instances of local diseases produced by local causes, in order to establish our opinions of the independent nature of local diseases. I further remarked, that constitutions disposed to local diseased actions, might naturally be supposed to be liable at the same

time to a manifest disorder of the nervous system and of the digestive organs ; and from thence, as I observed, might have arisen that connexion between local disease and general disorder, which I have so continually remarked. I likewise added, that though the cases related naturally suggested an opinion, that there is some constitutional cause for the production of local diseases, they appeared to me insufficient to prove it. After having, however, drawn the opinions which I offered from a very considerable number of cases, and having been solicitous to state both sides of the question as fairly as I was able, that the reader might judge of it for himself, I trust no imputation of haste can properly be attached to my conduct. In my own opinions I place very little confidence ; yet it is impossible to avoid forming them, and I think it proper to relate them for the reasons which have been stated in the preface.

That such opinions as have been delivered in the four paragraphs preceding the last, are deduced from a partial, though most commonly presenting, view of the subject, I now readily repeat ; because I have seen instances of local diseases, in which I could not trace any disturbance of the nervous system, or of the digestive organs, apparently adequate to their production. With respect to some of the striking cases which I have related, wherein the suddenness of the cure made it, I think, evident that the local disease was the effect of nervous disorder, induced by that of the digestive organs ; it may be further inquired. how is it possible that a similar cause should produce such various effects ? Is it because a state of weakness and irritation having occurred, those local diseases ensue, to which there is a predisposition in the constitution ? And are we to consider the general disorder of the system, as the exciting or predisponent cause of the local disease ?

Granting it were ascertained, that local diseases generally arise from disturbance of the constitution at large, and consequently (as it has been my chief object to state) may be most readily and effectually cured by measures which tran-

quillize or invigorate the constitution, still it would be very improbable, and contrary to common observations, to suppose that local diseases might not arise without any material constitutional disturbance.

Though I am strongly impressed with the opinion, that the primary causes of local diseases are, in general, such as I have represented, yet I think it probable, that there may be adjunct circumstances at present but little understood, which by their co-operation lead to the peculiarity of such diseases. In our present state of knowledge, therefore, I think it better to consider the disturbance of the system in general, as merely the exciting cause of local diseases. With this view of the subject, the cases recorded show how suddenly local diseases are frequently cured, when the exciting cause is removed; how generally they decline in proportion as the exciting cause is diminished: and thus they indicate how they may be prevented by a timely attention to mitigate and remove that cause.

It may not be improper further to state the opinions which I have formed respecting the origin of diseases of particular organs, and which may be considered as local diseases, though they are not generally alluded to when that term is employed. If we may be able to trace the origins of diseases of the absorbent and salivary glands, of the breast and testes, to constitutional causes, why may we not reasonably expect that similar circumstances may produce diseases of the lungs, liver, and kidney? It seems to me improbable that so complex a structure as the human body should be so correctly formed, as that every part should possess its due proportion of vessels and nerves, endowed with an exact degree of natural and relative strength; or in other words, that there should be no such thing as comparative weakness or irritability of the different organs of the body, such as should predispose them to disease.

We may therefore account rationally, and in conformity to acknowledged facts, for the production of diseases in vital organs, by supposing, that a state of general weakness and

irritability being induced, the naturally weak parts suffer in the greatest degree, and in consequence they most readily become the subjects of disease. But when diseases of vital or other organs occur, it is probable that another cause contributes to their production; that is, the sympathy which each organ has with the disorders of another. If, then, the organ thus sympathetically affected be naturally disposed to disease, its structure may be irremediably spoiled in consequence of vascular actions, excited through the medium of nervous irritation. If this opinion be correct, it is highly important, as the medical indication in this case is to remove the exciting cause, and our attention becomes directed to an organ in which perhaps there is but little manifestation of disorder, or if there be, which is likely to be overlooked when the attention is so forcibly attracted to an apparently far greater evil.

ON ANEURISMS.

ON ANEURISMS.

THE exposure of a portion of artery, and tying it in order to stop the current of blood into an aneurismal sac, as proposed by Mr. Hunter, may be said to have been a new operation, at least in modern surgery. It is not therefore surprising that errors were at first committed in the mode of performing it. The hæmorrhages, which took place after the operation in the first cases in which it was performed, arose from the ulceration of the artery that had been tied. The vessel in these cases was laid bare and detached in some degree from its surrounding connexions, and the middle of the detached portion was tied by a single ligature. An artery thus circumstanced must necessarily inflame; which it would do in different modes and degrees, accordingly as the state of the constitution, or of the part, was more or less healthy; and this inflammation produced the ulceration of the vessel.

The occurrence of hæmorrhage led some surgeons to adopt a practice which cannot but be considered as injurious. They applied a second ligature above the other, leaving it loose, but ready to be drawn tight if the first should not answer. The second ligature, however, must not only keep a certain portion of the artery detached from the surrounding parts, but must also give additional irritation to the inflamed vessel; and on both these accounts it is more likely to make the inflammation end in suppuration or ulceration.

The mode of performing the operation for the aneurism, which Mr. Hunter's judgment and experience taught him to adopt, was to expose and disturb the artery as little as possible, and, after having tied it, to bring the surrounding parts into contact with it again. Though an experienced and skilful operator may accomplish this object with very little disturbance of the artery from its natural situation and connexions, yet I cannot but suspect that surgeons in general

may not be so successful especially in cases where from the deep situation of the vessel, the surrounding it with a ligature depends more on feeling than on sight.* Also, though when the artery is sound and the constitution healthy, ulceration may not ensue, even though the artery is in some degree separated from its surrounding connexions, and tied by a single ligature; yet it is surely proper to guard against those circumstances which tend to produce its ulceration. As large arteries do not ulcerate when they are tied upon the surface of a stump after amputation, it occurred to me that it would be right to tie them, in cases of aneurism, as nearly as possible in the same manner and under the same circumstances. The large vessels on the surface of the stump continued to possess all their natural surrounding connexions, whilst they are left in a lax state, in consequence of their division.

To accomplish this object in cases of aneurism, I propose that the operation should be performed in the following manner:—The operator should divide the immediate coverings of the artery, till he has fairly exposed its external elastic coat. When he can touch the bare vessel, he will not find any difficulty in separating from it, by means of his finger and thumb, or the blunt edge of an aneurismal needle, the cellular substance that connects it to the contiguous parts. This part of the operation is not painful, and should be performed slowly. The firm sides of the vessel enables the surgeon clearly to distinguish its surface, and by keeping the finger in exact contact with it, a passage may be made completely round the artery. Care should be taken not to elevate the artery more than can be possibly avoided, because the artery would be stretched in its longitudinal direction

* It can neither be considered as a compliment to Mr. Home, nor an affront to any other surgeon, to suppose that no one can perform the operation for an aneurism after Mr. Hunter's method better than he does. Yet in a series of cases, published in the second volume of the Transactions of a Society for the Promotion of Medical and Chirurgical Knowledge, hæmorrhage from ulceration of the artery appears to have been a frequent occurrence.

by so doing; and care should also be taken not to injure the contiguous veins or nerves. When the operator has thus gently insinuated his finger between the vessel and its surrounding connexions, so that an inch of its surface is every where exposed, two ligatures may be put under it, one of which is to be carried upwards, and the other downwards, as far as the artery is detached, and then tied as firmly as possible. The artery should then be divided by a probe-pointed bistoury in the interspace between the two ligatures, but nearer to the lower ligature than to the upper one.

In my opinion, large arteries should always be tied with moderately thick ligatures, because we may then draw the noose as tightly as possible, without apprehension of cutting or tearing the coats of the vessel, or of breaking the ligature. The latter occurrence would in many cases prove a very embarrassing circumstance, and it might be very injurious on account of the jerk communicated to the artery to a considerable distance. Also, when an artery is tied with a thick ligature, the compression made by it is not so great as to produce a speedy mortification and separation of the end of the vessel, so that the ligature remains, in general, a fortnight before it is detached, and therefore time is allowed for the consolidation of the sides of the vessel prior to its separation.* When an artery is thus tied, in cases of aneurism, it possesses its natural surrounding connexions and support, and is left loose, in consequence of its division. It appears, indeed, in most respects similarly circumstanced to an artery tied upon the surface of a stump; and as I never knew hæmorrhage from ulceration of the vessel take place

* Doctor Jones, whose numerous and accurate experiments have thrown much light upon the natural means by which hæmorrhages are suppressed, thinks that the ligatures should be round and firm; because such cords are most likely to cut the internal coats of the artery. I am solicitous that they should be strong and moderately large; because, as far as I have remarked, large ligatures remain longest on the arteries before they are detached; and in examining the stumps of patients who have died after amputation, I have frequently seen the sides of the artery unclosed, even though the ligatures have fallen off from them.

after the operation for aneurism, when it was accomplished in this manner, I cannot but continue to practise and recommend this method of securing the artery. That the operation for the aneurism will succeed when only a single ligature is employed, has been proved by experience; but as hæmorrhages, independent of ulceration of the artery, so frequently arise from an inflammatory action of the vessels, every thing tending to produce a tranquil state of the wounded parts, cannot but deserve to be put in practice, and the relaxation of the artery by its division must, I think, contribute to this effect.

The cases of aneurisms which I am about to recite, are not, however, intended to illustrate any mode of conducting the operation, but merely to show the powers which nature possesses of carrying on the circulation, and maintaining the limb in its pristine state of vigour and strength, even though so large an artery as the external iliac may have been tied, and thereby rendered impervious.

CASE I.

Feb. 1796,—James Lindsey, aged thirty-four, about a year ago perceived a swelling beneath the calf of his right leg; and soon afterward, whilst walking, he suddenly felt, he said, “as if he had been struck on the part by a cannon ball,” the pain being so great that he could not move for several minutes. The pain, however, gradually abated; but the swelling of the leg had continued to increase since that time. The whole calf was now lifted up by a quantity of blood effused beneath it. The muscles appeared thin, and were so extremely tense as to occasion great pain, accompanied with considerable erysipelas of the whole leg; so that a speedy ulceration and sloughing, or sudden rupture of the distended part, was hourly to be dreaded. Under these circumstances, tying the artery above the aneurism, was the only means of relieving the patient from his present suffering, and of preserving him from sudden death. But what

was particularly discouraging, both to the patient and surgeon, was the discovery of another aneurism, situated in the femoral artery of the opposite limb. No preternatural pulsation, however, could be felt in any other part of his body. The operation was performed by Sir Charles Blicke in the following manner:—An incision about three inches in length was made through the integuments of the middle of the thigh, so as to expose the inner edge of the sartorius muscle and the fascia covering the artery, which was divided to the extent of somewhat more than an inch. The artery was separated from its connexions for one inch of its length. Two ligatures were put under it, and firmly tied, and the artery was divided in the interval between them. The lips of the wound were then brought together by slips of sticking-plaster: This patient's limb was for some time much colder than the other, and nearly three days elapsed before it had regained its natural degree of warmth; but the tension, pain, and erysipelatous inflammation quickly subsided. The divided integuments united above and below the ligatures, but not between them; and there was also a large discharge from the wound: which circumstance was probably owing to the state of the patient's constitution, which was much reduced in point of strength. This man, however, did not complain of the least throbbing, tension, or pain in the wounded part; and this entire exemption from the sufferings of other patients, I could not but attribute to the division of the artery. The upper ligature came away on the tenth, and the lower on the fifteenth day; after which the wound healed gradually, though very slowly.

About five weeks after this operation, the aneurism in the opposite thigh was almost ready to burst; the tumour having acquired a pyramidal form, and the skin covering the apex having yielded so much as to form a kind of process from the tumour. Indeed the integuments at this part were so thin, that we every hour expected them to give way. The aneurism was situated so high, as to make it probable that the disease extended above the place where the arteria pro-

funda is sent off. The patient had hitherto refused to submit to the operation ; but on reflecting that if the tumour should burst in the night, he must perish unless the bleeding vessel could be immediately secured, he consented to let me tie the artery in the groin, whilst we had daylight and proper assistance. The tumour approached so near to the groin, as to prevent us from compressing the artery against the bone ; for, in attempting this, the compress occupied the place where the incision ought to be made, and our endeavours to make a compression still higher were ineffectual ; they weakened, but did not interrupt the pulsation of the tumour. As the artery was so imperfectly compressed, hæmorrhage took place during the operation, which, though not dangerous to the patient, proved extremely embarrassing to the surgeon ; for, in attempting to lay bare the fascia of the thigh, I divided, by the very first incision, so many small arteries supplying the inguinal glands, and also so many veins, that the blood which was poured forth, completely filled the space made by the incision, and overflowed the sides of the wound. The application of the sponge, the usual resource on these occasions, was of no avail ; for the wound was instantly filled again, so that the whole operation was to be done upon parts covered with blood, where the only guide in its performance was the feeling. I did indeed see some exposed inguinal glands, and found that I had divided two of them in trying to get at the fascia of the thigh. As soon as I could distinctly feel this part, I made a small opening through it, and introducing my finger, I divided it upward as far as Poupart's ligament, and downward as low as the aneurismal sack would allow me. The pulsation of the artery now served as my guide. Laying aside, therefore, all surgical instruments, I made way with my finger in a perpendicular direction, till I could touch its coats, and then, with my finger and thumb, separated it from its connexions, so as to be able to grasp it alone between them. I then passed two ligatures under it by means of an eyed probe, and drawing one of them upward, and the other downward, as far as the space would

permit, I tied them firmly. The upper ligature was about half an inch from the os pubis, and the lower one the same distance from the arteria profunda, which vessel I had distinctly felt before I tied the ligatures.

There are, perhaps, few situations of aneurism where the artery can be tied so separately and distinctly as here ; the pulsation directs the surgeon to the precise situation of the vessel ; and if he only keeps sufficiently close to its sides when he passes the ligature round, neither the vein nor the nerve can be included. I did not divide the artery between the two ligatures ; it was suggested that it were better not to do so ; and I knew that I could obtain all the advantages of a relaxed state of the vessel, by merely bending the thigh upon the pelvis. The patient did not, after the operation, suffer any kind of pain from the wounded parts ; which, I think, shows that the artery did not inflame much in consequence of the ligature. The suppuration was moderate, and every thing relative to the wound went on as well as could be expected. The limb, and particularly the foot, was colder than that of the opposite side ; but in about three days, it gradually acquired its natural temperature ; and it all along retained a perfect state of sensibility, which I considered as a proof that it was sufficiently nourished. To prevent the heat from being carried off faster than it was generated, the limb was wrapped in flannel ; but I avoided the application of any artificial warmth, lest its stimulus should prove injurious, by exciting action when the powers of life in the part might have been considerably diminished.

The blood in the aneurismal sac did not appear to have coagulated before the operation ; for the bulk of the tumour could be greatly lessened by pressure, whenever the patient would allow the attempt to be made, so that I conclude the limb had received a considerable quantity of blood through the femoral artery, until that vessel was tied. The tumour diminished greatly after the operation, and the blood contained in it became coagulated. This reduction of the swell-

ing, I think, was owing to a considerable part of the blood passing onward through the femoral artery ; and I regretted afterward, that, at the time of the operation, I had not endeavoured to press all the blood from the aneurismal sac ; which experiment would have shown how far it was fluid or coagulated. Every thing, with respect both to the state of the limb, and the patient's general health, went on well till the fifteenth day, when the upper ligature separated, and the blood gushed in a full stream from the open extremity of the vessel. This fortunately happened during the attendance of the surgeons at the hospital, and the bleeding was stopped by pressure until their arrival. The stream of blood which flowed upon any remission or wrong application of the pressure, was so large, that we did not dare to remove the patient even from the bed on which he lay. Mr. Ramsden undertook, in this situation, to prevent the further escape of blood from the vessel, whilst I proceeded to tie the artery above Poupart's ligament. Accordingly I first made an incision, about three inches in length, through the integuments of the abdomen, in the direction of the artery, and thus laid bare the aponeurosis of the external oblique muscle, which I next divided from its connexion with Poupart's ligament, in the direction of the external wound, for the extent of about two inches. The margins of the internal oblique and transversalis muscles being thus exposed, I introduced my finger beneath them for the protection of the peritonæum, and then divided them. Next, with my hand I pushed the peritonæum and its contents upward and inward, and took hold of the external iliac artery with my finger and thumb, so that I was thus enabled to command the flow of blood from the wound. It now only remained that I should pass a ligature round the artery, and tie it ; but this required caution, on account of the contiguity of the vein to the artery. I could not see the vessels ; but I made a separation between them with my fingers. Having, however, only a common needle, with which to pass the ligature, I several times withdrew

the point, from the apprehension of wounding the vein.* After having tied the artery about an inch and a half above Poupart's ligament, I divided that part, and thus laid the new and the former wound into one. I traced, as well as I could with my finger, the continuation of the artery from the place where the ligature was now made, to that where it was formerly applied. I wished to have divided the artery, and to have suffered it to retract behind the peritonæum: but I found it so attached to the surrounding parts, as to render such division difficult, and perhaps not advisable.

The lips of the wound were brought together with sticking-plaster, and one suture only was made, opposite to the natural situation of Poupart's ligament. The peritonæum was pressed back into its place, and the protrusion of it restrained by bringing together the integuments with straps of sticking-plaster.

No perceptible alteration occurred in the state of the limb after this second operation; but the patient's health was considerably reduced by his having suffered from the complaint nearly twelve months, by having undergone three operations, and by the loss of a considerable quantity of blood. No adhesion took place between the divided parts; the edges of the wound were open and sloughy; the wound was painful, discharged a great deal of pus, and was so extremely tender that he could not bear it to be touched. Still no greater mischief appeared till the fifth day after the operation, when a hæmorrhage of arterial blood took place in such quantity, that there was no doubt but that it arose from the principal

* It would be, I think, a useful addition to our surgical instruments for such purposes, to have needles made with handles of pure, and consequently, flexible silver, and with steel points that have edges just sharp enough to pass through the cellular substance; but neither so pointed nor so sharp, as to endanger the wounding any parts of consequence that may be contiguous to those round which they are passed. When the points of these instruments were once passed underneath the vessel, the surgeon could bend their handles so as to accommodate them to the space they have to turn in, and thus avoid an inconvenience which, I believe, most surgeons must have experienced; I mean, the great difficulty of turning a common needle in a deep and narrow wound.

artery ; though the ligature with which it was tied still remained firm. The patient's health was now so impaired, and his weakness so great, that an attempt at tying the artery still higher up, would have appeared like torturing him without any hopes of ultimate success. The wound was therefore cleansed and dressed ; some compresses were applied upon it, and bound down by the spica bandage. By this treatment the hæmorrhage was stopped, and the attendants were ordered to make a pressure on the bandage if any fresh bleeding should occur. The compresses were renewed for three succeeding days ; and though occasionally the wound bled, yet it was not profusely, or in such quantity as to destroy the patient : his strength however gradually declined ; a troublesome cough occasioned extreme pain in the wound, and in the course of the eighth day after the last operation, he died.

Dissection.

No marks of disease were discoverable in the aorta, or in the internal iliac artery. The external iliac was covered by a great number of lymphatic glands, which prevented it from being readily distinguished ; yet when separated from these, it did not appear diseased. For nearly two inches above the part which was tied, the lymphatic glands covering the artery were considerably enlarged, having, no doubt, become additionally swollen from the irritation excited by the ligature. The external surface of one of them next the wound had ulcerated ; and the ulceration penetrated through the gland, and communicated with the artery, as was afterward made evident by slitting open that vessel. It was through this aperture that the blood had escaped ; for the ligature still remained firm upon that part of the artery which it had enclosed. From this ligature to the place where the vessel had formerly been tied, the artery was so closely connected with the surrounding substance, that dissection was required to separate them. The parts of the artery from which the former ligatures had separated, were about half an inch asunder, and the canal of the vessel appeared perfectly open.—The

whole of the vessels from the bifurcation of the aorta, to the aperture in the tendon of the triceps muscle, were now removed and carefully dissected; and after being stuffed, and hardened by spirits, they were cut open to show the state of them internally. A coagulum of blood, about two inches long, was found above the part where the last ligature was made. At what time this coagulum had been formed, is perhaps difficult to ascertain; it did not seem to have taken place after death, for above it the artery contained no blood: and if it had occurred immediately after the operation, it is probable that it would have prevented the hæmorrhage. I have already remarked that the man did not bleed for some time previous to his death, in which interval, perhaps, this coagulum had been formed.—The ulcerated opening from the artery through the diseased gland, admitted the passage of a moderate sized bougie. The ligature, which still firmly enclosed the artery, had brought its sides in contact, so as to render it probable that they would have united. All the other parts of the femoral artery were quite open, so that a large bougie could be passed from the lower end of it, through the aneurismal sac, to the place where the ligature now remained. About half an inch of the artery was wanting, which had been, as it were, cut out by the ligatures in the first operation. The sides of the arteries below the part which was tied were thicker than natural, and their internal surface was rough, and of a yellowish white colour. The *arteria profunda* was filled with coagulated blood, and had become reduced to less than the natural size. The sides of the artery of the opposite limb had firmly united at the part where it had been tied. No coagulum was found in it, and it had not diminished in size in any remarkable degree above the part which was closed.

It may be inquired in this case, why the artery did not heal, but upon the separation of the ligature remained widely open? That the ligature was tightly applied, is, I think, evident from its suppressing all hæmorrhage till its separation on the fifteenth day. I am inclined to attribute the want of

union in the artery to its unhealthy state, which opinion is confirmed by the dissection, which showed that even the lower orifice of the artery had not healed, whilst the artery in the other limb, which was tied much further from the aneurism, and where the vessel was more likely to be sound and healthy, had become firmly united. The event of this case would induce me to tie the artery as remotely from the seat of aneurism as could with propriety be done.

In this first operation of tying the external iliac artery, I was urged to perform it by the impulse of the moment, for the death of the patient would otherwise have been inevitable. In this case I thought I disturbed the peritonæum too much, and tied the artery higher than was necessary. As the limb, however, did not appear to suffer materially, I felt it a duty to perform a similar operation in the following case. The vessel was tied lower down, so that it was brought into view at the time of the operation. It was tied with two ligatures, and divided in the interval; it afterward firmly united at each extremity, and the ligatures came away at the usual time: neither did there appear any deficiency in the nutrition of the limb. These circumstances afford reasonable expectations of success in future operations of this kind; yet in the present instance the operation appeared to have been too long delayed, and the patient to have died from an event which was not foreseen, but which might perhaps have been prevented.

CASE II.

— Wrungel, a German, by trade a sugar-baker, of a sickly aspect and slender make, about 5 feet 7 inches high, and near 40 years of age, was admitted into St. Bartholomew's Hospital, on account of an aneurism in the femoral artery, close to Poupart's ligament. This he imputed to a strain about three weeks before. The tumour at the time of admission was of the size of a small orange, and the blood contained in it was fluid; for it could be entirely expressed from the aneurismal sac. At a consultation on the treatment

of this case, I said that I did not think a surgeon warranted in tying the external iliac artery, till he was in some measure compelled to it by the progress of the disease, for the following reasons: 1st. An aneurism, in proportion to its increase and duration, obstructs the passage of the blood through the natural and principal channels, and obliges it to circulate by other courses, which are enlarged according to the exigency of the case. It seems highly probable, that in proportion to the size of the artery which is tied, and the magnitude of the part to be nourished after that operation, so will be the degree of previous enlargement in these collateral channels, which is necessary to ensure its success. On this account the operation should be delayed longer in an inguinal aneurism than in any other.

2dly. The operation of tying the external iliac artery must, in the present state of our knowledge, be considered as very serious in its nature, and uncertain in its event. I had then only once tied this vessel when a man would otherwise have bled to death from the femoral artery; and though the limb was nourished, the artery ulcerated. The operation was done a second time in London, and the limb mortified; but no fair practical inference can, I am told, be drawn from the latter case, as the operation was postponed till mortification was as it were impending.

3dly. There is some chance in aneurisms of a cure spontaneously occurring from the closure of the artery above by the coagulation of the blood. To cite those instances only which have come within my knowledge, and which it seems right to mention, as it increases the stock of facts before the public; I have known such a spontaneous cure take place twice in the popliteal artery. once in the *arteria profunda femoris*, and once in the axillary artery. For these reasons it was agreed to postpone the operation in the case of the present patient till circumstances should appear to demand its performance.*

* There was about twelve months ago a soldier in the York hospital, who had an aneurism of the femoral artery; but the external tumour had so much

Our poor patient therefore lay in the hospital during two months, in which time his disease gradually increased, and his health declined. Towards the latter part of the time he suffered a great deal of pain in the front of his thigh, which deprived him of rest, and the whole limb was largely œdematous. These symptoms would naturally arise from the pressure which the aneurism must make on the anterior nerves and absorbents of the thigh. The tumour had advanced towards the surface, and the skin had become slightly inflamed, yet the protruding part of the tumour was not of

overlapped Poupart's ligament, and interposed itself between the integuments and the fascia of the external oblique muscle, as to render an operation very difficult, if not impossible. In this case the integuments mortifying, occasioned a simultaneous coagulation of the blood in the artery, for though the coagula came out, yet there was no fresh hæmorrhage, and the patient recovered.

Since the preceding edition of this book, I have seen two other cases of the spontaneous cure of aneurisms; one was in the external iliac artery, and the aneurismal sac formed a large tumour within the abdomen, extending as high as the umbilicus, and across the belly as far as the linea alba.

In the other case I conjecture that the aneurism was in the common trunk, which gives rise to the right cephalic and subclavian portion of the brachial artery. The pressure of the aneurismal sac had caused the absorption of the ribs beneath the clavicle, so that the tumour presented itself so exactly in the situation of the axillary artery, that I believe most surgeons would at first sight have supposed the tumour, which was as large as a large fist, and beat vehemently, to have been an aneurism of that artery; yet when the subclavian artery was pressed above the clavicle, the pulse at the wrist was stopped, without lessening the pulsations of the aneurism. The patient had come to London, supposing that some operation might be undertaken for his relief. His digestive organs were disordered, and his heart throbbed violently against his side. I recommended him to live on as spare a diet as he possibly could, observing to him, that by keeping his vessels in a state free from plenitude, he was most likely to lessen that forcible action of the heart which caused the increase of his disease, whilst at the same time the same measures would tend to ensure the complete digestion of every portion of aliment he received into his stomach, and thereby improve the state of his digestive organs. I urged him also to regulate the functions of the other viscera concerned in digestion. I heard that about six months afterward he was very well, and lately upon inquiry was informed that he was as well as at any period of his life. About three years afterward I heard that a relapse had taken place, and that the patient died. I have known other cases greatly benefited and apparently cured by spare diet alone, with attention to regulate the functions of the digestive organs. Yet in some instances, also occasional bleeding seemed both requisite and beneficial.

greater extent than when he was first admitted into the hospital; and no judgment could be formed of that part which was more deeply situated, on account of the general swelling of the thigh. The blood could even now be expressed from the prominent part of the tumour, and I felt anxious, lest the obstruction to the circulation in the main artery should not have been sufficient to have obliged the blood to circulate by other channels. It deserves to be remarked, that the aneurism may extend considerably beneath the fascia of the thigh, causing pain and œdema by its pressure, and yet that part which advances towards the surface may be of no great magnitude.

The patient's sufferings increased considerably during the week preceding the operation, so that he declared his present state was almost insupportable, and solicited that something might be done to change it either for the better or the worse.

He never, however, was able to explain the cause of this uncommon degree of anxiety and inquietude.

The operation was undertaken on Saturday the 24th of October. An incision of three inches in length was made through the integuments of the abdomen, beginning just above the middle of Poupart's ligament, and consequently external to the epigastric artery, which was continued upwards, but slightly inclined towards the ilium. The aponeurosis of the external oblique muscle being thus exposed, was next divided in the direction of the external wound. The lower part of the internal oblique muscle was thus uncovered, and the finger being introduced below the inferior margin of it and of the transversalis muscle, they were divided by the crooked bistoury for about one inch and a half. I now introduced my finger beneath the bag of the peritonæum, and carried it upwards by the side of the psoas muscle, so as to touch the artery about an inch above Poupart's ligament. I took care to disturb the peritonæum as little as possible, detaching it to no greater extent than would serve to admit my two fingers to touch the vessel. The pulsations of the artery made it clearly distinguishable from the contiguous parts, but I could not

get my finger round it with the facility which I expected. This was the only circumstance which caused any delay in the performance of the operation. After ineffectual trials to pass my finger beneath the artery, I was obliged to make a slight incision on either side of it, in the same manner as is necessary when it is taken up in the thigh, where the fascia which binds it down in its situation is strong. After this I found no difficulty in passing my forefinger beneath the artery, which I drew gently down, so as to see it behind the bag of the peritonæum. By means of an eyed probe, two ligatures were conveyed round the vessel; one of these was carried upwards as far as the artery had been detached, and the other downwards: they were firmly tied, and the vessel was divided in the space between them. Nothing further remained than to close the external wound, which was done by one suture, and some strips of sticking-plaster. The threads of the upper ligature were left out of the wound above the suture which closed its edges, and those of the lower beneath.

A few remarks on this operation may be permitted. To divide the parietes of the abdomen, push aside the peritonæum, and tie the external iliac artery by the side of the psoas muscle, is an operation more formidable in sound, and on its first proposition, than it is in reality. It is performed almost without shedding blood, so that the principal circumstances of it are very evident. When I formerly performed this operation, I was urged to it by immediate necessity: I tied the artery much higher than in the present case, disturbed the peritonæum in a greater degree, and, contrary to my own principles, I did not divide the artery. In the present case, having time to deliberate upon the steps of the operation, I detached merely so much of the peritonæum as enabled me to reach the artery, as far as I conveniently could, above Poupart's ligament; but not so far as to make it difficult to ascertain that I surrounded the artery only with my finger, without injuring any of the adjacent parts, nor so far but that I could draw down and distinguish the artery which I included in the ligature. The remembrance of the swelling

in the external iliac glands, and of the ulceration of the artery in the former case, led to this difference of conduct.

The poor man was greatly exhausted by the operation, and his leg, which had been chilled by exposure during the operation, continued very cold for a long time afterward. It was wrapped up in flannels, to prevent the dissipation of its own heat : but I would not apply any artificial warmth to restore its temperature lest it should act as a stimulus.

He could not compose himself after the operation, nor did he sleep during the night, so that on the following day his state was very unpromising. His pulse beat 160 in a minute, his tongue was covered by a dark brown fur ; he looked agitated, and a purging took place, which was not restrained till the following night, by a cordial and opiate mixture. Respecting his pulse, it is proper to mention that it beat 120 most days in the week preceding the operation.

His thigh was as warm as that of the sound side, his leg cooler than the opposite one, and his foot many degrees colder. He had, however, perfect sensation in his toes, and power of moving them. The leg and foot were rubbed with oil three or four times a day, in order to prevent any stagnation in the veins, and to diminish perspiration. It was well covered as before by flannels.

On Monday, the 2d day, (Oct. 26,) the pulse was less frequent : he had slept a good deal during the night, and seemed stupified by the opium ; but was on the whole so little better, that I concluded he would gradually sink in consequence of the shock of the operation. The temperature of the limb was a little increased. The man, however, took bread and milk and other food, in moderate quantities, whenever it was offered to him : the purging having ceased, the quantity of the opiate was diminished. He rather improved in the evening, and rested well during the night ; so that on (Oct. 27,) the third day after that of the operation, every circumstance wore a favourable aspect. His pulse did not exceed 100, and was moderately firm and full ; his appetite had increased : the temperature of the limb was a good deal augmented, so that

his foot was scarcely colder than that of the sound side ; and the œdema of the limb was considerably diminished. I now dressed his wound, in which he had not complained of pain, nor of any tenderness, when the surrounding parts were compressed. The incision appeared but as a line, except at the neighbourhood of the ligatures, where it was a little open, and from whence there issued a moderate quantity of as healthy pus as I had ever seen. The surrounding parts were perfectly natural both in appearance and sensation. On the fourth day (Oct. 28.) he was still better : his pulse 90 ; his appetite good ; his sleep sound ; and his limb lessening in size, and increasing in warmth. The students at the hospital had dressed the wound before my arrival, and reported that the discharge was tinged with blood.

On the fifth day (Oct. 29.) he was still better, his pulse being but 80 when I counted it. The wound and contiguous parts looked remarkably well, but a bloody sanies was discharged, which I felt unable to account for.

On the sixth day (Oct. 30.) the state of his health and limb continued as well, if not improving. The bloody discharge however had increased in quantity, insomuch that it ran through the coverings of the wound and soiled the bed : it had also become fœtid. From the first occurrence of this bloody discharge I felt considerable uneasiness respecting it. I could not believe that a healthy wound would secrete such a sanies, and I felt apprehensive lest the wound should spread from disease. Nothing however took place to confirm this idea. It seemed probable also that if the aneurismal sac were not entire, some of the blood being exposed to the air might tinge the discharge from the wound, and grow putrid. I frequently pressed on the tumour, but could press no blood from the wound. In this state of uncertainty it was, however, pleasing to observe, that the patient's health continued in every respect better than could reasonably have been expected.

The circumstances of the case remained very much the same during the seventh and eighth days after the operation.

On the morning of the ninth (Nov. 2.) when I came to the hospital, I met Sir Charles Blicke, who told me that the poor German was dying; intelligence which equally surprised and shocked me.

He was indeed in a dreadful state, appearing like a man far advanced in typhus fever. His pulse was 150; his tongue covered with a brown fur; his intellect wavering, and the action of his muscles tremulous. On examining the wound with a view to discover the cause of this great and sudden alteration, and pressing on the tumour beneath Poupart's ligament, I forced out a great quantity of blood rendered fluid and highly fœtid by putrefaction, insomuch that it instantly blackened the probe with which it accidentally came in contact.

The cause and circumstances of the bloody discharge were now made clear: the surface of the exposed coagulated blood of the aneurism had at first tinted the discharge from the wound, and then had, by gradual dissolution, been more plentifully commixed with it, and given it a degree of putridity. Till, however, the whole mass had become putrid, and had been converted in consequence into a fluid, it could not be forced out from beneath Poupart's ligament when pressure was made on the tumour; nor did it till that period excite inflammation in the surrounding parts by its acrimony, or derange the constitution by its absorption.

After entirely expressing the putrid blood I washed out the cyst with warm water, till it returned untinged. The relief which was by these means afforded to the poor man was very striking and considerable. His pulse became moderate, his intellect clear; he had some refreshing sleep, and again took food in moderate quantities. On the following day, when the integuments beneath Poupart's ligament were compressed, a considerable quantity of fœtid discharge and air were forced out. It was not however at all tinged with blood, and appeared to me to be merely the secretion from the cyst which had contained the blood. I directed that this discharge should be pressed out, the cavity syringed, and a poultice applied three times a day; but finding a considerable quantity of

fœtid fluid still lodged in the cyst, I thought it right to make an opening into it beneath Poupart's ligament, to afford it a more ready exit. No abatement in the quantity, or alteration in the quality of the discharge, was however remarked: it seemed to be such as a sloughing sore commonly furnishes.

This fever came on on the evening of the eighth day (Nov. 1.) after that of the operation; and I am convinced it would have speedily destroyed the patient, had not the cause been detected and removed. The powers of his constitution rallied again; his pulse was firm, and often not more than 100; he took sufficient food, and slept moderately well. But the part, as has been said, did not go on well, and seemed to prevent any increase of strength. For a week I was not without hopes that some favourable change might happen, but afterward I lost all such expectations, as his already much reduced powers were still further declining; nevertheless, he held out more than another week, when he died on November 16, the twenty-third day after the operation. A few days before his death, both ligatures came away with the dressings.

Dissection.

A very slight adhesion had taken place between the sigmoid flexure of the colon and that part of the peritonæum which was opposite to the wound, but there was no other appearance of that membrane, or of the bowels, having suffered any inflammation in consequence of the operation. The peritonæum was separated from the loins, and from the posterior half of the left side of the diaphragm, by a considerable collection of blood, which extended downward to Poupart's ligament, and communicated under that ligament by a small aperture with the aneurismal sac. This opening was situated in the direction of that crevice which is found between the internal iliac and psoas muscles. The only rational explanation that can be given of the formation of this collection is, that the blood had burst its way from the aneurismal sac in the vacancy between the muscles just mentioned; after which it would readily and extensively separate the perito-

næum in the manner described. I am inclined to attribute to this circumstance the undefinable disturbance of health which the poor patient suffered during the week preceding the operation. It may, perhaps, excite surprise that this collection did not become putrid.

No particular account can be given of the aneurismal sac beneath Poupart's ligament, since it and the contiguous parts had sloughed in consequence of the irritation of the putrid blood. A small aperture had been made by this sloughing in the front of the orbicular ligament of the hip joint, and a small extent of the thigh bone was, by the same cause, deprived of its periosteum.

A bougie was passed from the lower end of the femoral artery into the sac.

The extremities of the external iliac artery, which had been divided in the operation, were united together by a firm new-formed substance; the sides of each extremity were perfectly closed, and a small plug of coagulated blood was found in each.

Having thus given as brief an account as I am able of the circumstances of this case, as they appeared to me, I cannot conclude, without mentioning the observations of others, particularly as they may assist in suggesting rules of conduct for future operations on similar cases. It has been said that the irritation of the aneurismal bag was probably a spontaneous occurrence, and not the effect of the acrimony of the putrid blood. But the suddenness of this attack, the manifest existence of a cause sufficient to produce it, and the total absence of such an occurrence in all other cases of aneurism, render this supposition highly improbable.

It has also been imagined that part of the discharged blood might have returned from the lower end of the artery. This latter opinion is very improbable, since after the complete removal of the blood, none returned by that channel; and in the first case which I have related, none returned by the inferior part of the artery, though the area of it was still of its natural dimensions, and unobstructed. This latter ob-

servation had tended to diminish my confidence in the powers of the communicating channels, and made me wish to defer the performance of the operation as long as possible. It seems evident, that in the present instance it was too long delayed.

It would be desirable in future to perform the operation before an extensive diffusion of blood had taken place ; indeed, could the adequateness of the collateral arteries for the supply of the limb be established, it would be proper to operate at an early period of the disease.

It deserves to be considered whether, in cases where it is probable the blood is become diffused, it might not be right at the time of the operation to open the aneurismal bag, and remove the blood. I should, however, be inclined to postpone this attempt ; for, perhaps, no necessity might exist, as putrefaction might not take place. A few days will determine the degree of life of the limb, and would make a wound less likely to ulcerate or slough. Should signs of the putrefaction of the blood ensue, or the probability of such an occurrence become evident, I should think it necessary to make a small opening into the aneurismal bag for the removal of the contained blood. This being done, if no blood came from the lower orifice of the artery, there would be no necessity for tying it.

CASE III.

Jane Field, aged forty, who had been in the habit of drinking to excess, was admitted into St. Bartholomew's Hospital, with a very large femoral aneurism, reaching as high as Poupart's ligament. The whole limb was œdematous, but in no very considerable degree. She was quite incapable of using the least exercise, or of sitting upright ; and even in bed she suffered continual pain, which was much aggravated during the pulsation of the aneurism. The pain was so violent as to preclude sleep. She had no appetite ; her pulse was feeble and frequent, generally exceeding 100 ; but her tongue was not furred ; and her bowels were regular.

On Saturday, 11th October, 1806, the operation was performed in the same manner as in the last case. An incision, about three inches in length, was made through the integuments of the abdomen, beginning just above Poupart's ligament. Having divided the skin and the aponeurosis of the external oblique muscle, I introduced my finger between the margin of the internal oblique and transverse muscles and the peritonæum. I then divided their lower edges upward, in the direction of the external wound, to the extent of an inch and a half, with a probe-pointed bistoury. Having thus made room for the admission of my finger, I put it down upon the artery, felt its pulsations, and gently insinuated it beneath the vessel; and then, with the aneurismal needle, passed under it two moderately thick ligatures, carrying them upward and downward, as far as the detachment of the artery permitted, and tying them as firmly as I could. I next divided the artery in the interval, but much nearer to the lower ligature than to the upper one. The wound was afterward closed, in the middle by a ligature, and in other parts by sticking-plaster. Upon removing the patient to bed, she complained of great pain in the wound, and in her head; and was very restless and ungovernable. She wished for something to procure sleep, and I gave her twenty-five drops of laudanum. This, instead of having the desired effect, made her much more restless; she was continually changing her position in bed, and complaining of violent headach. At night she became more tranquil. The one foot was much colder than the other; but the limbs at the knees were nearly of an equal temperature.

Sunday, 12th, I visited her early in the morning, and found that she had been moderately quiet during the night; that she had suffered much pain in her foot, but none in the wound. The pain in the limb she described as having first attacked the thigh, next the leg, and afterward the foot, which last pain had now ceased. The foot was warmer than it was the preceding evening, and in a state of perspiration: it was four degrees of heat lower, by Fahrenheit's scale,

than that of the healthy limb. The superficial veins of the leg were filled with blood. Her pulse was 96. She had no appetite. I left her with a promise to visit her again at night, recommending her to lie quiet, and take some simple nourishment. About noon, one of the dressers, observing that her skin was hot, and her tongue dry, gave her some saline medicine, with a small quantity of antimonial wine, which occasioned vomiting, and such continued nausea, that she refused all kinds of food. The limb, at night, continued in the same state as in the morning. She was free from pain; her pulse 120. As she was without an evacuation, I gave her a pill, containing two and a half grains of *pil. aloet. e myrrh.* with the same quantity of extract of colocynth, ordering it to be repeated in the morning, if necessary.

Monday, 13th. The foot was nearly of the same temperature with the other. She had had two stools, and felt much more comfortable. Still, however, she had an aversion to all kinds of nourishment. Her pulse was 150 and 160, at different times of the day. I may here mention, that every subsequent day, she had one or more stools, without having recourse to opening medicine; and whenever she was more irritable or disturbed than usual, she had a tendency to purging. In the evening of this day, I inquired if she had a wish for any particular kind of nourishment; and at her suggestion, gave her half a pint of porter, with some ginger and toasted bread. This seemed to agree with her stomach, as she slept the whole night, and awoke much refreshed the next morning. Her tongue was then clean; she took some tea and muffin for breakfast, and broth and bread in moderate quantities, in the course of the day. Half a pint of porter was allowed her at dinner and supper. Her pulse this day, (Tuesday) was 95. The foot warmer than the other. The wound was dressed for the first time: it appeared well closed, and discharged but little. Wednesday, pulse about the same number; had slept during the night, but not so soundly as on the preceding one. The wound and contiguous parts were tender; there was a considerable discharge, which was fetid; the lower ligature came off the artery. The artery,

as I have mentioned, was divided very near to the lower ligature ; and it is probable, that, in the restlessness of the patient subsequent to the operation, the motions of the limb had drawn the artery from out of the ligature.

Thursday, The wound very tender, and the skin had inflamed very much ; pulse 84.

Friday, The discharge from the wound less in quantity, and more puriform ; pulse the same in number, but very feeble.

Saturday, The patient had been seized in the middle of the night with severe headach and shivering, and in the morning she could eat no breakfast. Her tongue was rather dry, and slightly covered with a brown fur ; pulse 95, and feeble. Half a pint of wine was allowed her in sago, in addition to the porter ; and she took the *infus. menth. vitriol.* of the hospital, with some tincture of gentian.

Sunday, She was much better ; tongue moist and clean, and her appetite much improved. She disliked the bitterness of the medicine, pepermint-water was therefore substituted for the common mint-water, and the tincture of gentian was omitted ; pulse 82 ; skin cool.

Monday, In the same state as yesterday ; granulations appeared in the wound below the ligature, which closed it in the middle. This part of the wound is now about an inch in breadth, and a third more in length. The wound above the ligature about one-fourth of an inch across ; and the new flesh, by which it is united, of a tawny colour, and flabby texture. The surface of the skin, to a considerable extent from the wound, red and excoriated.

Tuesday, She had a return of headach, with loss of appetite ; her pulse 96. There flowed from the wound a considerable discharge, of an offensive smell, and seemingly irritating to the skin over which it passed. She complained of having had a restless night ; and observed that, in general, she found herself well or ill, as the preceding night had passed comfortably or otherwise. Thinking it probable that the irritable state of the wound might contribute, in a great

measure, to prevent her from sleeping, I dressed it with an aqueous solution of opium, and smeared the excoriated skin with lard, to prevent the acrimonious discharge from affecting it. All appearance of granulations in the wound had vanished. I ordered her fifteen drops of laudanum in her night draught ; and, instead of the *infus. menth. vitriol.*, I gave her *decoct. cinchon.* oz.ij. with dr.j. of *tinct. card. comp.* every four hours.

Wednesday, She had a comfortable night, with much sleep ; her pulse 80. The wound greatly amended. The discharge puriform, less fetid, and smaller in quantity. The new flesh above the ligature florid ; and granulations appeared again on the sides of the wound, below the ligature. The same treatment was continued.

Thursday, She had not rested so well, and complained of headach. The wound, however, was rather better than on the preceding day. I cut out the ligature which closed the wound in the middle, thinking it might tend to keep up irritation. She attributed the pain in her head to the opium she had taken ; to ascertain this point, I ordered the dose to be increased to twenty-five drops.

Friday, She had slept well, and was free from headach ; her pulse under 80. This day, the ligature, from the upper part of the artery, came away with the dressings. The excoriated skin had healed ; the redness was inconsiderable. The wound, in every part, had a healing appearance. It seems unnecessary to detail particularly the subsequent part of the case. She was kept in bed to the end of the third week, when she was allowed to sit up, that her bed might be made. I thought this caution requisite, from knowing that ligatures are detached from arteries before the sides of the vessel are united. I also confined her to bed during the whole of the fourth week : but advised her to move the limb about frequently. The wound healed like a healthy wound ; and was nearly closed in a month after the operation. During the third week, when the wound no longer proved a source of irritation, her pulse did not exceed 75 strokes in a minute ;

it was generally lower, and once I found it to be only 68. At the expiration of the month, she got up daily, and walked about the ward ; although, on her admission into the hospital, she was incapable of walking at all. There was not the least œdema of the limb. Its circumference, at the calf, was but one third of an inch less than the opposite side. Having walked many times the length of the ward, she became tired, and thought that the limb which had been operated on felt more fatigued than the other. The aneurismal tumour remains at this time of a considerable size. It is certainly more than one-third less than at the time of the operation. I have related the case thus particularly, in order that the reader may judge of it for himself. To me it appears, from this and the former cases, that, in an advanced state of femoral aneurism, the artery may be tied above Poupart's ligament, with as little detriment to the circulation of the limb, as in other cases of aneurism, where the operation is attended with very constant success. The symptoms immediately subsequent to the operation, appear to me to have arisen entirely from the irritable and weak state of the patient. She had pain in the head from the operation ; and so she had afterward, whenever her health was disordered by irritation. Her pulse, prior to her taking the medicine which acted as an emetic, was 96 ; but the subsequent day it was 150 or 160. This appears to be the result of the state of the stomach, for that becoming tranquil, the pulse was again reduced to 95 or 96. In a constitution so weak and irritable, a wound was not likely to heal kindly ; and all the subsequent circumstances of the case are satisfactorily explained, as the effects of an irritable wound, acting upon an irritable constitution. Upon the wound becoming healthy, at the expiration of a fortnight, all variations of the constitution ceased. I cannot, therefore, but consider the perplexing circumstances that succeeded the operation, as the effect of the patient's peculiarity of constitution, and not as arising from the operation itself, or from the state of the limb consequent to such an operation. A similar operation has lately been performed

by Mr. Frere, of Birmingham, with success. The patient being healthy, the wound healed without difficulty.

Mr. Tomlinson, of Birmingham, also performed a similar operation with equal success, so that it seems proved that the external iliac artery may be tied, in the case of a femoral aneurism, with as little detriment to the limb, as occurs from tying the femoral artery in a case of popliteal aneurism. I lately saw the woman who was the subject of the last case which I have related, and there is no distinguishable difference in the size or strength of the two extremities.

CASE IV.

J. Peterson, a Swedish sailor, about forty years of age, was admitted into St. Bartholomew's Hospital, on account of an aneurism of the femoral artery, just below the groin. He was a thin man, but had strong muscles. He had a languid appearance; and his pulse was small and feeble; his appetite, according to his report, moderate, and bowels regular; his tongue, however, was much furred. As the upper and most prominent part of the aneurismal tumour was ascending above Poupart's ligament, so as to make it probable, that if it increased it might overlap the ligament, and render the operation difficult, delay was inadmissible, and the operation was performed on Saturday, 25th February, 1809. It was accomplished as in the preceding case. I put my finger behind the peritonæum, and clearly distinguished the cylindrical form, and firmness of the artery; but I could not perceive its pulsation. I pressed on the vessel, and the beating of the aneurism ceased; I remitted the pressure, and it was renewed. Having thus ascertained that I had my finger upon the artery, I tried to separate it, so as to get my finger round it; but I could not succeed. I then tried with the point of the aneurismal needle, carrying it close to the artery from without, towards the cavity of the pelvis; but the vessel yielded so considerably, that I did not accomplish it. I tried in a contrary direction, and though the

artery receded from its situation, as I think, fully half an inch, yet by perseverance I accomplished my purpose. I then passed another aneurismal needle, threaded with a double ligature, through the track that I had made, and tied each ligature firmly. I have related these circumstances, that the reader may know why the artery was not tied as it was in the preceding case. I could not bring the artery into view. I might have done so lower down nearer to Poupart's ligament; but the apprehension of producing any communication between the air and the blood of the aneurismal bag, which might occasion its putrefaction, made me tie the artery at some distance above the ligament. The recession of the artery in this case, before the pressure made by the aneurismal needle, was so considerable as to excite my surprise.

The patient lay upon his side with his thigh bent upon the pelvis, and for the first three days after the operation without pain, or any apparent disturbance of his constitution. He was fed with bread and tea, and bread and broth, and his bowels were regular. The wound seemed closed by adhesion, except at its lower part, where the ligatures came out. On the fourth night, he was seized with violent and distressing pain in the epigastric region, and on the left side of his chest; he had not the least sleep, and felt very anxious and disturbed. His pulse beat the next day 130 in a minute; his skin was hot and dry, his face flushed, and his tongue covered with a dry brown crust. Two grains of calomel were given to him, and effervescing saline draughts were taken every four hours.

The calomel produced a purging stool during the night, which had not a drop of bile in it. The following day his pulse exceeded 100 only by a few strokes, his skin felt temperate, his tongue was moist, and not so brown or incrustated. His pain, also, was much diminished, though the epigastric region was still tender. His saline draughts were continued, and he was directed to take five grains of the pilul. hydrarg. each night. The next day he was still better: his pulse 90,

his skin moist, and his tongue cleaner; he took food without disgust, though not with much appetite. As he had no evacuation from his bowels, a little opening electuary was given him, and the saline draughts were changed for the *infus. menth. vitriol.* with a little *inct. cardam.* He had a stool in the night, which was of a light ochre colour; that is, a light brown, which dilution would not convert into a yellow. He continued the same medicines till the tenth day after the operation, with an evident amendment in his health; though the alvine discharges, which we contrived to procure daily, were still of the colour above described, though somewhat deeper.

On the tenth day, after observing his tongue and pulse, &c. those who saw him joined with me in opinion, that he was in better health than when he was admitted into the hospital.

During this constitutional disturbance, the upper part of the wound became open, and the discharge was offensive and irritating, and excoriated the skin over which it flowed. I therefore greased it with fresh lard at each dressing, to prevent as much as possible the discharge from acting upon it. Some swelling of the parts on that side of the wound next the ilium also took place. Still there was nothing very materially wrong, and the state of the wound gradually amended as the patient's health became tranquil.

On the tenth day, the ligatures came away, and then the patient first complained of a pain on the inside of his thigh, just above his knee.

On the eleventh day, he repeated his complaints, and said that the pain disturbed him, and prevented his sleeping during the night. I knew not to what to attribute it; I thought it might indicate some irritation of the anterior crural nerve; however, as the patient remained pretty well, I gave no directions respecting it.

On the twelfth day, when I visited the patient, I was shocked at his appearance. His countenance expressed great anxiety and despondency; and his pulse was more than 120. His tongue was covered with a brown fur. He had

missed his regular evacuation from the bowels. Being clear that the calomel had been of essential service before, I gave him two grains of that medicine, and ordered again the effervescing draughts.

On the thirteenth day, he was no better ; but more languid. The calomel had produced two copious loose stools, scarcely tinted with an ochre colour. I requested Dr. Roberts to see him, who directed him to take a grain of opium at night ; ordered him sago and wine for food ; and the infusion of cascarrilla with tinct. of columbo.

Fourteenth day, he neither seemed better nor worse ; he had slept four hours in the night. A slight blush of the skin appeared on the inside of the thigh, such as indicates inflammation of the absorbing vessels. Fomentations and poultices were directed to this part. Dr. R. also ordered half a grain of calomel, with five of cicuta, to be taken night and morning.

Fifteenth day, he was considerably better, though his leg continued painful : the pain however was diminished. He was directed to continue the same medicines ; and to ensure a good night, if one grain of opium failed to give him rest, he was allowed to take another after four hours.

Sixteenth day, not quite so well. He had no evacuation, for the last twenty-four hours. He took a little opening electuary.

Seventeenth day, he had a stool during the night, and was better. His thigh was œdematous, but not painful. The pain was descending towards his ankle. Dr. Roberts wished him to take the blue pill in preference to the calomel. Five grains were therefore given each night.

Eighteenth day, he was better, and continued gradually to improve till the twenty-fourth day, when he declared he felt quite well, and had had six hours comfortable sleep. The colour of the stools had been gradually improving ; and on that day, when such a marked amendment took place, the stool might be said to be nearly properly tinctured with bile, and of a proper consistence.

During this time an abscess had formed on the inside of the thigh, a little above the knee, where the absorbents of the limb began to inflame, and the matter had been discharged by a puncture made with a lancet. Swelling in the ham likewise took place, and was apparently caused by the irritation of the absorbents in that part, but no matter formed in it, and the leg also became œdematous. The wound made by the operation had healed firmly, and all tumefaction about it had subsided. As the patient's bowels acted regularly, no medicines were now given him.

After about a week had elapsed, he was seized as before with pain in the epigastric region, rheumatism in the right shoulder, and inability to move the right arm. His countenance again expressed despondency and disturbance; his pulse was frequent, and his skin hot; the abscess also was painful, and discharged copiously, and became distended with matter; so that it seemed necessary to enlarge the aperture, which had nearly healed. His tongue was much furred, and his stools had no bile in them.

He again took calomel at first, and afterward the pilul. hydrarg., and the secretion of bile was gradually renewed and increased, as in the preceding instances, which produced a proportionate amendment in his general health. His limb also was so much improved as to enable him to walk about the ward, and to go out occasionally into the air.

Believing that living in a better air would greatly contribute to the restoration of his health, he was soon afterward discharged from the hospital; looking as well as he did on his admission, and capable of walking with but little infirmity. He was advised to take the pilul. hydrarg. every second night till the secretion of bile was right, and to take them afterward whenever he perceived it to be deficient or faulty. He was also enjoined to keep his bowels regular in other respects.

The cases which I have related and referred to, show that the current of blood through the external iliac artery may be stopped without occasioning any material, or even evident diminution of the powers of the limb. It also appears to

me that this operation does not disturb the constitution, in a greater degree, than a similar one performed upon arteries of less magnitude. It is true, that considerable disorder of the constitution took place in the cases which I have related, but it seemed to have arisen from the peculiarities of the state of health of the patients, and not as a necessary consequence of the operation. In the last case, every thing went on favourably till a disorder of the digestive organs occurred. To such disorder, it cannot be doubted that there was a strong predisposition; and of which, the operation by its effects on the mind as well as the body, confinement in an hospital, and great alteration of diet, may be considered as the exciting causes. I think it probable that the state of the constitution might have greatly contributed to produce the general irritation of the absorbents of the limb, which was first observed on the day when the ligatures came away. I cannot doubt but that the inflammation of these vessels did, as indeed it generally does, greatly disturb the constitution and aggravate its disordered state. These conjectures appear to me to be verified by the last occurrence which I have related. When the wound was healed, and the limb so well as that it probably could impart no irritation to the general system, from leaving off the mercurial medicine, disorder of the digestive organs recurred and produced the effects which I have described.*

That the femoral aneurism, when it occurs near to the groin, may, like other aneurisms, sometimes be cured by the processes of nature, is proved by experience; yet this is not likely to be the common event of such cases. I knew two instances of patients dying of hæmorrhage from such aneurisms. The sufferings both of body and mind, in these cases, were shocking. The patients were unable to move, and the distention of the integuments and pressure on the

* I saw this patient a year afterward; he had been a voyage to South America, from whence he had returned in perfect health. He was broad-shouldered and very athletic; his legs were bowed, and equally and powerfully muscular: in short, if a painter had wished to represent a hardy tar, he could not have chosen a better subject for the portrait.

nerves occasioned great pain and irritation. The patients also lay apprehensive and uncertain of the hour when their sufferings might be terminated by a fearful and fatal hæmorrhage. I think myself therefore fortunate that I was first, as it were, compelled to perform an operation, which, I trust, may be found to diminish the sufferings, and preserve the lives of those afflicted with this disease.

SURGICAL OBSERVATIONS

ON

DISEASES RESEMBLING SYPHILIS;

AND ON

DISEASES OF THE URETHRA.

On the Origin, Symptoms, and Treatment of Diseases produced by the Absorption of morbid Animal Matter, and which in Appearance frequently resemble Syphilis.

SECTION I.

INTRODUCTORY REMARKS.

SINCE the publication of Mr. Hunter's accurate observations on the Venereal Disease, it has been generally admitted that certain modifications of animal matter, being applied to a susceptible surface of the body, will in many instances excite an ulcerative disease, in which the diseased part secretes matter precisely similar to that which had excited it. These kinds of infectious matter Mr. Hunter called morbid animal poisons, in order to distinguish them from those poisons with which some animals are furnished for purposes connected with their economy. Mr. Hunter further showed that the animal matter of one person might induce disease in another, even though the person from whom the matter was derived had no disease.* As Mr. Hunter's opinions have been confirmed by the subsequent experience of other practitioners, and appear to have obtained pretty general assent; and as some of the cases which I mean to bring forward seem still further to confirm and illustrate these opinions, it does not appear necessary for me at present to enlarge on these subjects.

Infectious matter may be the effect of disease in one person and the cause of it in another, and yet it would appear

* See his cases of diseases induced by the transplantation of teeth, and the sucking of children, in his work on the Venereal Disease.

a solecism were we to call the infectious matter itself diseased or morbid. Besides, as some kinds of animal matter, which are not the products of disease, are nevertheless capable of exciting it, I have, in the first edition of this book, called all kinds of infectious animal matter, morbid animal poisons, which term there appears no reason to change.

It cannot, I think, on due consideration of the subject, be denied, that many sores are induced on the genitals, by sexual intercourse, which are not the effects of the venereal poison, and that many of them infect the constitution, and produce secondary symptoms resembling those of that disorder. It may be asked, however, if these diseases be not venereal, what are they ? As they are all the consequence of sexual intercourse, they may, in one sense of the word, be said to be venereal. To avoid ambiguity, therefore, I shall in these pages denominate that disease which broke out at the siege of Naples, and which Mr. Hunter has described as the venereal disease, by the name given to it by nosological writers; that is, Syphilis ; and I shall call those diseases, which differ from it in their progress and mode of becoming well, though they strikingly resemble it in appearance, by a name importing these circumstances, that is, Pseudo-Syphilitic Diseases.

To prepare the mind of the reader to take an impartial survey of these subjects, I think it will be useful to make a few preliminary observations relative to the probable origin of pseudo-syphilitic diseases.

Celsus describes eight species of sores with which the genitals were affected in consequence of sexual intercourse ; and as this was long before Syphilis was known, it follows that there must be other causes producing them. Some of the sores described by Celsus, are not unfrequently met with at present, and they are not syphilitic. Sores also frequently form upon the genitals of females in consequence of that irritation which accompanies diseased secretions from the vagina. Sores, for instance, very frequently succeed to gonorrhœa in the lower class of females, who pay little attention to cleanliness, and do not abstain from sexual intercourse.

Sores frequently break out on the prepuce and glans of the male, in consequence of the irritation which gonorrhœa or other diseases of the urethra produce in these parts. These sores generally heal without the use of mercury, frequently without inducing any constitutional disease : and when they do infect the constitution, the disease occasioned by them is not syphilitic. I merely mention these circumstances at present, to show that it is possible for ulcers to form which may not be syphilitic, and yet the discharges from them may prove morbid, and produce disease in others.

Even discharges from the genitals of one person, where no ulcers exist, are capable of exciting ulcers in another. I am aware that no argument can be grounded upon the observation of this fact in common cases, where the parties have been promiscuous in their intercourse with others, and their veracity cannot be relied on. But I have known both gonorrhœa and ulcers occasioned by connexion with persons who had no syphilitic disease, where the veracity of the parties might be relied on, and where no promiscuous intercourse could be suspected. The case of supposed gonorrhœa, arising from sexual intercourse with persons who apparently have no disease, are so very common as to need no exemplification.* I think, however, it will be proper to adduce some instances, in which ulcers have taken place in consequence of the application of irritating matter which was not of a syphilitic nature, because cases which can be cited in proof of this fact must be rare occurrences, and not likely to be met with, except in the extensive practice of a large city.

* Nevertheless it may be useful to relate one instance of this kind. A married medical man of more than forty years of age, connected himself with a married lady, his patient : she also was of an age in which "the heigh day of the blood is tame." This act was punished by what he believed to be a most malignant clap, which continued on him, with little mitigation, for more than a year. The patient had, however, strictures in his urethra, of which he was not aware, and was readily cured after the period I have mentioned, by the use of bougies. Neither the female nor her husband had any disease, nor was there any promiscuous connexions, if the word of the parties may be relied on.

CASE I.

A gentleman was connected with a female who was kept by another gentleman, and derived from such connexion several very irritable and foul sores, which broke out on the prepuce, but which, however, had not the syphilitic characters. As neither the woman nor her keeper had any disease, he had no wish to take mercury, nor had I, being consulted on his case, any desire to recommend it to him. The sores did not heal until between two and three months, though a variety of local applications were employed. He at length, however, became perfectly well, and I cautioned him not to be again connected with the same woman. But his inclination got the better of his prudence, and another crop of sores, equally irritable, foul, and tedious, took place in consequence of a second connexion. These sores were treated in the same manner as before, and slowly healed: After some lapse of time he again erred in the same manner; and again received the same punishment. He had no constitutional disease from these sores.

CASE II.

A gentleman had been my patient with strictures in the urethra, which were nearly, though not perfectly well. A large bougie could be passed with facility, but it gave some pain on passing those parts of the urethra where the strictures had been, and there still existed a very trivial discharge from that canal. Under these circumstances he connected himself with a female, who, there was good reason to believe, had had no communication with any other person. She, however, had in consequence of this connexion, four sores, which formed upon the under surface of the labia pudendi, two on each side. These sores were very irritable, and became larger than a sixpence, and of an oval form. They threw forth exuberant flesh of a livid hue, were very

tender, and had a great deal of inflammation surrounding them. Various dressings were employed without amending them; and after a month had elapsed, I was induced to recommend from 10 to 15 grains of the pil. hydrarg. to be taken daily. After another fortnight, as no amendment was perceived, and the mouth was not affected by the medicine, the patient rubbed in two drachms, by measure, of mercurial ointment every second night. A second fortnight elapsed without any amendment in the sores, though the mouth was slightly affected. At this time the uneasiness of the patient and her friend induced me to desire they would consult another surgeon, who thought the sores syphilitic, and wished that the quantity of mercury should be increased, so as more decidedly to affect the mouth. In consequence of this consultation, the patient rubbed in the same quantity of mercurial ointment every night, and discontinued the internal use of the medicine. At the conclusion of another fortnight, the mercury suddenly affected the gums, and produced a degree of ptyalism which prevented its further use. Still the sores were not amended, and on the abatement of the ptyalism, I again had recourse to local means without resuming the use of mercury, the inefficacy of which had been fully proved. The sores now healed rapidly under the local use of a solution of cupr. vitriolat. Wherever mercury has been used, it must be difficult to decide whether cases are or are not syphilitic. I think it very clear, however, that the case just described was not of that nature; and, as to the sores healing suddenly, it is a very common occurrence when no mercury is used. For sores which are not affected by a local application in their incipient state, will sometimes heal rapidly if the same application be made to them in an advanced state, when the activity of the disease is abated, or its nature changed by its continuance.

Though no constitutional affection succeeded to the sores induced in the foregoing cases, yet that the system is liable to be contaminated by absorption from ulcers of this description will clearly appear from the cases related in the subsequent

part of this paper : and at present to corroborate this fact by the testimony of another, I shall relate a case which was communicated to me by an eminent and accurate surgeon in this town.

CASE III.

A gentleman, lately married, complained to his surgeon of a running from the urethra, which so strikingly resembled a venereal gonorrhœa that the latter could not but ascribe it to infection. He had afterward a swelling of the prepuce, and sores on that part, which confirmed the surgeon in his opinion, and produced a kind of dissension between his patient and him, the one affirming that the disease was venereal, the other that it could not possibly be so, as his wife had no disease, and he had had connexion with no other woman. The effect of this litigation was, that the surgeon would not urge the taking of mercury, nor would the patient require the administration of that medicine, though a bubo, sore throat, and eruptions succeeded, which could not be distinguished from similar complaints of a syphilitic nature, but all of which spontaneously got well.

The narrative of the following case was lately sent to me by Mr. Watson, of Stourport. It is an instance of the nurse being infected from the child, and similar instances in this respect are not unfrequently met with. Yet it contains some interesting circumstances which are explanatory of my present subject, and I, therefore, take the liberty of inserting it in this place.

CASE IV.

Mrs. F., after suckling a nurse child about four months, perceived a small ulcer on the breast near the nipple, which she believed she caught from the child, as it had a bad nose and sore lips. At this time the ulcer was about the size of an almond, and of the shape of one. As it did not

heal from simple dressings, the surface of the sore was rubbed with argent. nitrat., and a wash of calomel in lime water was afterward applied. Under this treatment, the ulcer healed, and a gland in the axilla, which had enlarged, subsided. This happened about three weeks after the patient had first consulted me. Two months afterward the patient had a severe febrile attack, accompanied with sore throat, of which she soon recovered. To this succeeded a copper-coloured eruption, which came out on all parts of the body. No medicine was given at first, but as the patient became uneasy, some compound calomel pills, with small doses of nitric acid were directed. She took about 12 pills, and small doses of the nitric acid for the same length of time, when they were discontinued. In about two months all the eruptions had disappeared, except some white blisters, which had lately formed about the labia pudendi, and which gave her pain, when she walked. This complaint was removed in a few days by a solution of sulphat of zinc. About a week afterward, her husband showed me a sore on the penis, covered by a black scab. It was about the size of a sixpence, the surrounding skin was much inflamed, but the base of the sore was neither hard nor thickened. In a few days, a second sore appeared in the course of the absorbents between the first and the groin. The inguinal glands now became enlarged, and one of them suppurated. In about three weeks from the first appearance of the sore on the penis, the patient was attacked with feverish symptoms, which were followed by an eruption different from that which his wife had been affected with, but very similar to the erythema papulatum syphiliticum, represented by Dr. Willan. The sores on the penis spread rapidly for some days, but did not penetrate deeper than the skin, and after being twice touched with argent. nitrat. they soon healed with the use of calomel and lime water. The abscess in the groin was opened by a lancet, and the wound ulcerated considerably, but afterward healed by the same means, that had been serviceable to the other sores.

This patient never took any mercury, except once, when some calomel was given, with other aperients, as a purge.

It may be rationally supposed that the discharges from such sores as I have described, as well as the discharges from secreting surfaces not in a state of ulceration, may prove morbid and excite local diseases, or, if absorbed, may contaminate the constitution. Cases which render these opinions probable, are so frequent, that every surgeon must, I think, have remarked them. In consequence, however, of his preconceived opinions, he might distrust the veracity of his patients, and treat the disease as if it were syphilitic, and the consequences of such conduct will be displayed in the subsequent part of this paper.

After these preliminary observations, which are designed to show how sores on the genitals may arise from sexual intercourse at present as they did even in the time of Celsus; I may further remark that from the time of the breaking out of the lues venerea, it is probable such sores continued to occur, and were confounded with the sores induced by that disease; thus we may account for the opinions delivered by old authors, of even syphilis getting well spontaneously, or by the administration of medicines of acknowledged inefficacy. Every surgeon must have seen cases of syphilis getting progressively worse, till corrected by mercury, and regularly yielding to the effect of that medicine, and being permanently cured by one adequate mercurial course; so that his observations will induce him to admit the accuracy and justness of the description of that disease which Mr. Hunter has given in a great number of instances. Further, when from the insensibility of the constitution to the operation of mercury it has been difficult to excite its specific effect, how numerous are the cases of chancres, ulcers in the throat, and nodes, that have remained stationary and unvarying under a long use of mercury, and yet have yielded and become perfectly well, when by more energetic measures the constitution has at length been affected by this medicine. To identify what I consider as true syphilis, and to excite the reader's

attention to that disease, so that he may contrast it with those which make the subject of the present publication, I shall here insert a case which was related in the first edition of my surgical and physiological essays, to show the efficacy of mercurial fumigations in affecting the constitution, when other modes of administering mercury had failed to produce its specific effect.*

CASE V.

A young man had a chancre by the side of the frænum preputii, which had all the characters of true syphilis. It was of a circular form, with a thickened edge and base; there were no granulations, and matter adhered to the surface. For this, he took mercurial pills in large quantities, which never affected his mouth, though occasionally they produced griping pains, and made him feel very unwell. He was obliged at this time to travel pretty constantly, so that he could not conveniently rub in mercurial ointment. When the mercury was taken in such quantities as to make him feel ill, and to disorder his bowels, the sore looked red on the surface, and seemed disposed to heal, but when he diminished the quantity of the medicine the sore assumed its former diseased characters. After the chancre had continued for two months, a small bubo formed, suppurated, and burst. By persevering in the internal use of mercury to the greatest extent that he could do, the chancre healed and the

*, It is not my intention to republish the cases in proof of this fact, because I think that the present one is sufficient to evince its truth. It seems, however, right to mention that my opinions on this subject are unaltered, and to repeat, that I have found mercurial fumigations employed in the manner recommended by the Chevalier Lâlonette, a physician in Paris, in 1776, to be, in the majority of instances, a more powerful and innocent means of producing a mercurial affection of the constitution than in unction or the internal use of mercury, and equally certain of radically curing the disease for which it has been thus administered. The fumigating powder which I have used instead of Lâlonette's is calomel washed in water, containing a small quantity of ammonia, so that the powder may be deprived of its muriatic acid, and assume a dark gray colour.

bubo got well about the same time. This happened four months after the occurrence of the chancre, and six weeks after the breaking of the bubo. As at last having got the chancre to heal by pushing the use of mercury to an extent that made him feel very uncomfortable, and much indisposed, he left off the medicine sooner than he ought to have done. In two months more, his former occupations ceasing, he returned to London, where he afterward remained. Shortly after his return, which was in September, 1788, one of his tonsils seemed a little enlarged, indurated, and tender, so as to occasion a difficulty in deglutition. In the course of a week it ulcerated, and the ulcer acquired by degrees all the characters of syphilis. It was of an oval form, excavated, without granulations, and with matter adhering to its surface. The same circumstances took place in the opposite tonsil, and an exactly similar sore formed in it. As the history as well as the appearances of the primary chancre left no doubt of its nature, and as the secondary symptoms were equally unequivocal, he immediately began a mercurial course: being healthy, and his bowels not easily disturbed, he took, on an average, from two to three grains of calcined quicksilver, or calomel joined with opium, every day for three months; and also used mercurial ointment during the same period, beginning with two drachms, and gradually increasing it to an ounce daily; besides which, he had for a short time taken a solution of hydrargyrus muriatus. Yet all this scarcely produced any soreness of his gums, or caused any visible amendment in the ulcers of his throat; the only effect it had being that of preventing them from becoming worse. His bowels, indeed, were occasionally disturbed by the medicines, but were easily quieted by opium. To rub in the quantity of mercurial ointment used towards the latter part of the course, the patient spent nearly an hour and half every night and morning; but as he became weaker, he perspired considerably in consequence of this exercise, which tended to frustrate his endeavours, by pre-

venting, or at least greatly diminishing, the absorption of the medicine.

No ground being gained by pursuing this plan, Sir Charles Blicke recommended mercurial fumigation according to Lâlonette's method, which he had occasionally employed with success, and which would not only relieve the patient from the fatigue of rubbing in the ointment, but prevent any farther irritation of his bowels, by superseding the internal use of mercury. The patient was accordingly exposed, for half an hour each night, to the fumes produced from half an ounce of the powder; by which means, in less than a fortnight, his constitution and mouth became properly affected by the mercury; the ulcers healed soon afterward; and in about a month he was permitted to discontinue the remedy.

In this case the disease in all its circumstances precisely agreed with the description of syphilis given by Mr. Hunter. It was unchangeable in its characters; it regularly and progressively got worse when no mercury was employed; it was stationary when opposed by that medicine, and it was permanently cured by an adequate mercurial affection of the constitution.

Having been educated in the old school, under professors who prided themselves in possessing the *Tactus* and *Visus eruditus*, I was anxious to obtain that happy discrimination of colour that should enable me to pronounce from the copperish tint of an eruption that it was undoubtedly venereal. But my endeavours were ineffectual; and much was I gratified by the publication of Mr. Hunter's book, which furnished me with a clue to guide me through the labyrinth in which I had been bewildered. All my observations, while a student, corresponded with Mr. H.'s; and when I experienced as well as witnessed the perplexities of practice in these diseases, I saw nothing contrary to his description. I saw cases of true syphilitic disease, which had been regular in their progress and increase, when no mercury was used, regularly and permanently cured by that medicine. I also saw diseases resembling the venereal, which were neither regular

in their progress nor cure. Each year additional facts presented themselves to establish these opinions, and none appeared to contradict them. The following case in particular of a medical student of the hospital, made a strong impression upon my mind.

CASE VI.

This gentleman thought that he had infected a slight cut on his hand (which was situated in front and just below the little finger) with the discharge from a bubo in the groin that he had opened. The wound fretted out into a sore about the size of a sixpence, which he showed me, and which I affirmed had not the thickened edge and base, and other characters of a venereal chancre. I therefore recommended him to try the effect of local means, and not to use mercury.

In about a month the sore, which had spread a little, became again contracted in its dimensions, and assumed a healing appearance. At this time pain was felt extending up the arm, and suddenly a considerable tumour arose over the absorbing vessels, which proceed along the inner edge of the biceps muscle. This tumour became nearly as big as a small orange. As the original sore seemed now disposed to heal, and as there was no surrounding induration, I could not believe it syphilitic, and therefore recommended him still to abstain from mercury, and apply leeches, and linen moistened in the *aq : litharg : acet : comp :* to the tumour formed over the inflamed absorbents.

Under this treatment the tumour was discussed, and the sore at the same time healed. About three weeks afterward the patient called on me, and said that there were venereal ulcers in his throat; and in each tonsil there was an ulcer deeply excavated, with irregular edges, and with a surface covered by adhering matter; ulcers, in short, which every surgeon, who depends on his sight as his guide, would have pronounced to be syphilitic. Shortly after, also, some copper-coloured eruptions appeared on his face and breast. He

showed his diseases to several surgeons, on whose opinion he relied, who, without hesitation, affirmed that they were syphilitic, and that the mercurial course had been improperly delayed.

Whilst the patient was looking out for lodgings, in order that he might go through the mercurial process, a circumscribed thickening and elevation of the pericranium covering the frontal bone appeared ; it was of the circumference of a half-crown piece ; and was, in short, what every surgeon, who is guided only by his sight and touch, would, without hesitation, have called a true *corona veneris*. I now told the patient that I was still more inclined to believe his disease was not syphilitic, from the sudden and simultaneous occurrence of this node with the sore throat, &c. Other surgeons thought differently ; and I believe this very sensible and amiable young man imagined that his health would become a sacrifice if he any longer attended to my opinion. He was preparing to submit to a mercurial course, when very important concerns called him instantly into the country. He went with great reluctance, taking with him mercurial ointment, &c. : and after a fortnight I received a letter from him, saying that he found his complaints benefited by his journey ; that business had prevented him from beginning the use of mercury for a few days ; that he now found it was unnecessary, for his symptoms had almost disappeared ; and shortly afterward he became well.

At the time, and ever since, I considered this case as meriting publication, as being a most unequivocal instance of a disease occurring, which could not, from appearance, be distinguished by surgeons of the greatest experience from syphilis, and which, however, was undoubtedly of a different nature ; and I believe that there is no one, who would not have decided on this case, as those did who declared it to be syphilitic, unless they had had an opportunity of watching its progress very attentively. This case probably made me more scrupulous than I should otherwise have been in admitting diseases to be syphilitic, till their unabating progress

established their nature beyond the possibility of doubt; and from this hesitation in deciding I have been enabled to prove, that a great number of cases, in which mercury would have been employed, have got well without the use of that medicine.

In the course of practice, I frequently met with cases of a nature similar to the foregoing. In these, I had opportunities of tracing constitutional symptoms from the primary sores which had caused them; a circumstance which cannot frequently be done in hospital practice. I saw that the primary sores had not the character of syphilis, notwithstanding the secondary symptoms often strongly resembled those of that disease. As, however, I did not meet with other surgeons who thought as Mr. Hunter did on this subject, and as my observations so strictly coincided with his, I thought it right in the first volume of my *Surgical Observations*, published in 1804, to excite the public attention to these cases by laying before it the following Essay; but previously I inquired of the best surgeons in London, whether constitutional symptoms of syphilis do ever spontaneously amend? To this inquiry no one decidedly replied in the affirmative; whilst all without hesitation agreed that they were generally, if not constantly, progressive, unless checked by the operation of mercury. In consequence of this opinion, so concurrent with Mr. Hunter's description of the disease, I was induced to publish the following cases and remarks.

SECTION II.

On Pseudo-syphilitic Diseases becoming well spontaneously.

MR. HUNTER, in his excellent Treatise on the Venereal Disease, has related several cases supposed to be syphilitic, and some of which were certainly not so, as they got well without mercury; but in the greater number the employment of this medicine rendered their nature doubtful. Mr. Hunter, also, who was as cautious in drawing conclusions as he was accurate in making observations, expresses himself in many instances so diffidently on the subject, as, in my opinion, not sufficiently to impress the minds of his readers with the certainty, importance, and frequency of such facts. He concludes his observations by intimating "that undescribed diseases, resembling the venereal, are very numerous, and that what he has said is rather to be considered as hints for others to prosecute this inquiry further, than as a complete account of the subject." As it has occurred to me very frequently to meet with such cases, and as the necessity for discriminating them from syphilitic diseases appears to me of the highest importance, I shall prosecute the subject by relating some unequivocal cases of diseases strikingly resembling syphilis, but which, however, were disorders of a different nature, provided it be admitted that syphilis does not spontaneously get well without the aid of medicine.

The necessity for discrimination between these diseases will appear upon a slight consideration of the subject. If a surgeon, who does not see that extent of practice which occurs in a metropolis, administers mercury in one of the diseases resembling syphilis, he finds, perhaps, that the symptoms yield slowly; and even after a considerable and debilitating course of that medicine they may recur. They are then counteracted by a still more severe use of mercury, till they, perhaps, spontaneously cease, which may not happen till the patient's constitution is so enfeebled, that if it do not fall

into other state of disease, it very slowly regains the standard of health. Such cases would induce the surgeon to consider the venereal disease as peculiarly difficult to cure, and liable to recur on the remission of even a severe course of mercury. The consequence of this opinion is, that he employs mercury to an unnecessary and injurious degree in his general practice.

I do not mean, however, by these remarks to imply, that in my opinion, syphilitic diseases are equally susceptible of cure in every instance by mercury; nor am I an advocate for what has been termed an alterative course of this medicine. Cases which frequently occur have convinced me that it requires a very considerable mercurial effect to cure syphilis in some instances; and that this effect must be continued for a considerable time in order to ensure a cure. Mr Hunter probably wished the subject of diseases resembling syphilis to be prosecuted, in hopes that some distinctive characters might be discovered as peculiar to them; but the following cases show that these diseases ensue from primary infected sores of very dissimilar appearances, and sometimes arise without any primary sore having been observed.

Whilst, then, the primary symptoms are thus variable, and such as may perhaps in the greater number of cases be distinguished from those of syphilis, the secondary or constitutional symptoms often so strikingly resemble those of that disease, as not to be discriminated from them by sight, though in general they may be by their progress.

I have kept no particular account of the numerous cases which I have met with; but the five following instances happened in my own private practice within a few months, and the circumstances of them are still fresh in my memory. The cases are drawn up from narratives which I requested the patients themselves to make out of their own diseases.

CASE VII.

A gentleman had a sore on the lower part of the prepuce near the frænum, which was much irritated by travelling from the country. When he came to town there was a good deal of surrounding inflammation, and a thickening adjoining the edges of the sore which were irregular, and seemingly disposed to spread. An appearance of granulations had taken place on the surface of the ulcer, which was at this time as large as a shilling. I gave him the *pilulæ hydrargyri*, whilst I tried by local means to quiet the irritation of the sore, and of the surrounding parts. As the sore appeared to heal slowly, and seemingly in proportion to the quantity of mercury taken, the patient rubbed in at the same time some mercurial ointment, and continued to do so till after the sore was well, which was in about a month. In three weeks after he had left off these medicines, this patient applied to me on account of an ulceration on the *velum pendulum palati*, and on the surface of one tonsil; and soon afterward ulcers took place on the edges of the tongue, and on the inside of the lips and cheeks. Copper-coloured spots also came out on his arms and legs, and all over his body. They were very numerous, but none appeared on his face. By waiting and watching the progress of the disease, I found that some of the ulcers amended spontaneously, and that the palate got well. I therefore exhorted him to refrain from mercurial medicine, and he went into the country. A medical gentleman, whom the patient consulted, was very anxious to try something to cure this disease, when his patient was seized with a severe febrile complaint, during the continuance of which all these doubtful symptoms disappeared, and there has not been any return of disease since that time.

CASE VIII.

A gentleman had a small sore on the prepuce, at a little distance behind the corona glandis, which did not appear like a venereal chancre, and therefore no mercury was used. After about a fortnight, during which time it could scarcely be said to be better or worse, it suddenly became considerably indurated in its circumference, and the surrounding parts became inflamed. The hardness was so considerable that it resembled one of those indurated chancres which so frequently occur; and in consequence of this striking resemblance, another surgeon, whom the patient consulted at this time, insisted on his confining himself to his chamber, and using mercury attentively.

The quietude of the patient, with some little attention in regard to local applications, soon removed the inflammation and hardness, and the patient, who was controlled by nothing but his fears, discontinued his medicine after thrice using some mercurial ointment, and returned to his former mode of life.

About a month afterward, he called on me with an ulcer in each tonsil, one of which was deeply excavated, with irregular edges, and covered by adhering matter. Shortly afterward, copper-coloured spots appeared on his body, but these diseases all disappeared in about a month, without using mercury.

CASE IX.

A gentleman applied to me with a very irritable sore, or rather excoriation, extending itself over the left half of the corona glandis. It was unlike a syphilitic sore, as may be supposed from this description, yet, as the patient was young and healthy, I advised him to take some of the pilulæ hydragryri to guard against the possible consequences of absorption, and to bathe the parts affected with the aq. litharg.

acet. comp. c. opio, and to apply folded linen moistened with the wash round the penis. The prepuce soon became swollen and inflamed, so that he was unable to retract it, and the attempt gave him great pain. He was, therefore, directed to cleanse the part by injecting frequently the decoction of white poppy heads of a lukewarm temperature. After a week he tried a very weak solution of vitriolated zinc, and other metallic salts, but they all increased his pain, and he was obliged to return to the use of the anodyne wash. When he had persevered in this course three weeks without any evident amendment, he consulted another surgeon, who recommended the discontinuance of the mercurial medicine, and in lieu of it, the free use of the bark. This medicine he took for a week without any amendment; he then tried the nitrous acid for ten days, and afterward took cicuta.

In about two months he was able to retract the foreskin, and then the solution of vitriolated zinc appeared to lessen the irritability and contribute to the skinning of the sore, which was merely on the surface, not having been attended with any loss of substance.

Afterward the penis being subjected to some accidental irritation, the same kind of soreness spread over the other half of the corona glandis; but this disease was not accompanied with so much tenderness as the former one, and got well in less than a month. As soon as it was well, the patient had an ulceration of the velum pendulum palati, round which the cuticle assumed a whitish colour; the ulceration spread across the palate, but it was evident that the part first affected got better, whilst the ulcer became worse in the parts last affected. Two or three ulcers took place upon each edge of the tongue, and some on the inside of the lips. At the same time many copper-coloured spots appeared on the face, breast, arms, and lower extremities; they came out in succession, were of an oval shape, about the size of a sixpence, and had a strikingly syphilitic aspect.

Believing that the primary symptoms of this disease were not syphilitic, and observing that some part of the ulcer

on the palate healed, and that some of the sores on the tongue and lips got better, whilst new ones broke out, I recommended the patient to use no mercury. He went into the country, where all these maladies gradually disappeared, and in about a month he was perfectly well.

CASE X.

A person, whose irregular habits of life gave reason to suspect the existence of syphilis in the constitution, had ulcers in the tonsils, not superficial but deep. These were accompanied with copper-coloured spots on the face and breast, and eruptions on the head amidst the hair, accompanied with a great deal of scurf. These got well by anointing the head with ung. hydrarg. nitrat. mixed with simple ointment, which made me doubt whether the other diseases were really syphilitic, and caused me to delay the use of mercury. The complaints did not amend, nor did they get materially worse. There was attending these diseases a good deal of general indisposition; the appetite failed, and no sleep took place till the morning.

At this time a tenderness and thickening of the periosteum of the tibia took place. Though other medicines did not appear to be of any service, I still was averse to the use of mercury. Tired of delay, the patient consulted another surgeon, who declared the disease to be venereal, and desired that mercurial ointment might be used. The patient accordingly rubbed in two or three nights without feeling any effect from the medicine, and then set off on a party of pleasure to Brighton, where all the diseases gradually disappeared without any further use of mercury.

CASE XI.

A gentleman had an enlargement of a gland in the groin, probably from the absorption of some infectious matter, though he was not conscious of having had any sore. A second and a third gland became enlarged, the integuments became thickened and inflamed, and a very large bubo formed. It suppurated and burst in three places. The general tumefaction subsided, but by no means dispersed, and sinuses remained where the abscesses had been. About this time I saw the patient, which was two months after the first appearance of the disease.

Shortly after this, he had an ulceration, which spread over the velum pendulum palati, and except that it was more superficial, much resembled a syphilitic ulceration. It continued so long without amendment, that I began to think it was syphilitic. Bark was now given plentifully, and the ulcer evidently amended. The patient went afterward to the sea-side, where the bubo gradually dispersed: many months however elapsed before it entirely disappeared. The ulcerations of the velum pendulum palati also healed slowly; and ulcers, which afterward appeared in the back part of the pharynx, got well likewise without mercury.

These cases are not related as being rare or curious, but because they all occurred to me within the space of a few months, and because sufficient time has elapsed since their occurrence to show that there is no probability that there will be any recurrence of these or similar symptoms. It must be allowed that they are incontestable instances of diseases getting well without mercury, which could not be distinguished by mere inspection from similar diseases truly syphilitic. For though mercury was employed in some of the cases, it was used at such a time, or in such quantity, that it cannot in the least influence our decision as to this point. For instance, in the first case, though mercury was employed

for the cure of the primary ulcer, and did apparently contribute to it; yet the secondary symptoms got well without mercury, which according to the opinions now prevailing among surgeons, is a proof that neither was syphilitic. It may indeed be supposed that the syphilitic poison may be modified by certain constitutions, and its effects spontaneously disappear; and some may question if the secondary symptoms were the consequences of the sores or absorption to which I attribute them. What I have written is, I believe, in conformity to prevailing opinions, and I forbear to enter into uncertain discussions.

These instances, however, though not selected for the purpose, show that the primary infected sores which are capable of producing secondary symptoms, strikingly resembling those of syphilis, do not themselves possess any uniform characters. In the first case the ulcer had no uncommon appearance; it was of the size of a shilling, with fretful edges, and every where covered with granulations. In the second, there were no apparent granulations, and a great degree of induration suddenly surrounded it, giving it a striking resemblance to the indurated venereal chancre. In the third, the sore surface was extremely irritable; but though the disease existed for a long time, the ulcerative process did not eat into the part; and at the conclusion of the case, there was no loss of substance. In the fourth and fifth cases, the absorption of the matter, which caused the secondary symptoms, either took place without any breach of surface, or the primary sores were too insignificant to excite attention. I lately attended a gentleman who had an ulcerated throat, and eruptions on the head, which broke out between the second and third month after the appearance of a sore on the prepuce, which sore healed in a few days with no other treatment than bathing it with a solution of acetated lead, and applying to it a piece of lint moistened with that liquor. This circumstance made him disregard the primary sore, but he was assured by a surgeon whom he consulted, that the secondary symptoms were syphilitic; they however got well without mercury.

It is probable, that the poison of syphilis is of so acrid a quality that it always excites local ulceration of a peculiar and progressive nature, whilst the morbid poisons which produce pseudo-syphilis may be absorbed without any evident ulcer, or from a trivial ulcer, which may heal spontaneously; and if the consequent constitutional symptoms are considered as the effects of the former disease, and treated as such, I need not say what confusion must be produced in the mind of the surgeon who pursues this conduct, and how bewildered his opinions must be respecting venereal diseases. If, for instance, in the eleventh case, a surgeon had considered the secondary symptoms as syphilitic, and employed mercury successfully for their cure, he would set this down as a case of syphilitic bubo occurring without a previous chancre, and be inclined in his general practice to use mercury in all cases of buboes without chancre, lest constitutional diseases should ensue. There, however, does not appear any thing that should exempt the glands of the groin from enlargement, and diseases to which other absorbent glands are subject, whilst they are particularly liable to irritation and consequent disease from disorders of the urethra and other parts, to which they are connected by means of their vessels. The use of mercury as a specific, therefore, in enlargement of these glands, unless they have been preceded by a chancre, must, I think, be considered as improper.

I have met with many similar cases since those five that have been related, and of which, from their sudden and almost simultaneous occurrence, I was induced to take a written account; within these two months I have seen two cases of eruptions and three of sore throats. The eruptions took place particularly about the hands and feet: in one case, the patient has been salivated for them; the disease, however, recurred, and afterward got well without the use of mercury. In the other, there were warts and sores on the prepuce, and buboes in the groin, which suppurated and burst: the eruptions so strikingly resembled those of syphilis,

that all the medical men, who accidentally saw the patient, exclaimed that they were so, with a confidence proportioned to their professional skill and accuracy of observation. Indeed in this case, and in others, I have been almost impelled to use mercury, in consequence of the opinion and wishes of the patient and those of his friends. The history, however, of this disease did not accord with that of syphilis; the warts had preceded the sores; some sores healed, and others broke out; and at last, some of the eruptions began to get well, and the rest gradually disappeared. The third patient had a sore throat for which he had been salivated; it afterward recurred, when it got well without mercury. The fourth and fifth had ulcers in the throat and on the lips and tongue. They all got well without mercury. One of the patients who had the sore throat had been salivated, but the disease recurred. In the other two, I forebore to use mercury, and I have reason to say they will do well without it. In one of the latter cases there were ulcers on the tongue and the inside of the lips.

If, then, the occurrence of such cases be frequent, and the necessity of discriminating them from those of syphilis be of great importance, we may solicitously inquire by what circumstances we are to distinguish between diseases so similar in appearance, but so different in their nature. Mr. Hunter seemed to wish the prosecution of this subject, probably from the expectation that some characters appropriate to these diseases might be detected: I have not, however, been able to discover any; the fictitious disease in appearance so exactly resembles syphilis that no observation, however acute, seems to be capable of deciding upon its nature. Although the ulcers in these ambiguous cases generally spread more extensively along the surface of the part which they affect, yet this does not constantly happen, as is shown in the eighth case. In this case, however, the induration which surrounded the chancre occurred suddenly, and went away as rapidly. The progress therefore of the two diseases was very dis-

similar.* It must also be remarked, that true syphilitic spots and ulcers sometimes assume the appearance of other diseases, and do not possess their ordinary characteristics.

Since, then, our senses fail us in our endeavours to discriminate between these two diseases, and since the most important circumstance is to distinguish whether the disease be syphilis or not, we may inquire whether there are any circumstance in the progress of these different diseases which will serve us in distinguishing one from the other. It appears to me that there are ; and these cases are published not merely to show the frequency of such occurrences, and the necessity for discrimination, but to engage a more general attention to the means by which such distinction may be made. A very simple fact has enabled me in most cases to distinguish between the two diseases ; yet, simple as it is, if it be generally true, it is very important ; and if it were universally true, it would be of the highest consequence. The fact alluded to is, that the constitutional symptoms of syphilis are generally progressive, and never disappear unless medicine be employed. It may be added too, they are as generally relieved under an adequate effect of mercury on the constitution. An attention to such plain and simple circumstances has been of great use in directing the medical treatment which I have pursued, and I am induced to solicit the public attention to them, that others may determine the value of such remarks.

* On the subject of induration surrounding chancres, I think it may be useful to relate the following case, and to mention that I have known similar ones in a less degree :

A student in surgery showed me an indurated chancre, for the cure of which he had used a great quantity of mercury, which had affected his mouth for a long time, though not severely. The sore so exactly resembled a bad indurated venereal chancre, that I did not hesitate to recommend him to remain at home, and rub in so as to produce a slight salivation. But as no amendment was perceived after a fortnight's confinement, and under a considerable affection of the mouth, I was induced to inquire more strictly into the local treatment of the sore, which I found he was constantly irritating by various stimulating applications. He also affirmed that the hardness had several times gone away and returned again. By bathing the part with milk and water, and dressing it only night and morning with mild salve, the hardness quickly abated, and though he desisted from the mercurial course, it soon became perfectly well.

I have asked the opinion of several surgeons of great practice and abilities respecting this question ; Whether constitutional symptoms of syphilis do ever spontaneously amend ? and no one has decidedly replied in the affirmative, whilst all, without hesitation, agreed that they were generally progressive till checked by the effect of mercury. It seemed useless to seek further information ; for what surgeon is there at present, if he sees diseases that cannot be distinguished by the sight from syphilis, and hears that they arose in consequence of a chancre, that would suspend his judgment, and forbear to administer mercury ? If I have lived in the habit of so frequently detecting the imposing appearances of the secondary effects of these diseases, it is because I have been upon the watch, and because they have occurred in patients in whom I have seen the primary sores, the appearance and progress of which have excited my suspicion as to their nature. I have stated the rule as general, but not universal ; for I could myself relate cases of diseases, in which, from the great abatement, and even disappearance of symptoms, I have concluded the disease was not syphilitic ; yet from the duration of the disorder, or from the subsequent aggravation of its symptoms, the patient has desired, and I have recommended the use of mercury, and the disease has been successfully treated as syphilitic without its real nature being ascertained.

The rule which has been mentioned relates to the constitutional symptoms of the venereal disease, for the primary ones, chancres, do sometimes heal spontaneously, generally, however, though not constantly, leaving a thickening or induration of the affected part. They may also be induced to heal by topical means, without mercury, with similar events. Some enlargements of glands in the groin will also in like manner subside.

It may be fairly supposed that if some chancres heal spontaneously, constitutional diseases arising from the same cause may, in like manner, sometimes get well without mercury. The question can only be solved by experience. Delay will,

I am sure, frequently enable a surgeon to decide that the disease is not syphilis ; but there are cases in which no amendment takes place, and the surgeon is as it were forced, from the progress of the disease, to employ mercury, though doubtful of its nature.

In recommending prudent delay and attentive observation, I hope and believe that I am not recommending any thing likely to be of dangerous consequences. The venereal disease is generally soon checked by the use of mercury ; and in constitutions where much medicine is required to counteract its effects, that medicine may be given with freedom. By delay and observation we perhaps may perceive that eruptions and sore throats, which could not from appearance be distinguished from venereal, spontaneously amend : that some eruptions scale and become well, and the probability will of course be that the rest will do so likewise ; or that an ulcer mends in one part though it may spread in another, when the natural inference is, that the diseased actions in the sore will gradually cease, and health return spontaneously ; and that what has occurred in one part of an ulcer will successively take place in the others.

In recommending delay it cannot, I suppose, be thought that I would advise any one to wait till an ulcer destroyed the *velum pendulum palati*, or did material injury to any important part. There are cases where the progress of the disease obliges the surgeon to use mercury, even though he may be suspicious that it is not syphilitic. The effect of exciting a mercurial affection of the constitution, where we feel ourselves under the necessity of employing that medicine, in diseases resembling syphilis, is, as far as my observation enables me to determine, very various. It sometimes cures them very suddenly, and very differently from the gradual amendment which it produces in truly syphilitic diseases. Sometimes, however, these diseases yield more slowly to its operation, and are cured permanently. Sometimes the diseases recur in the same parts after a severe course of mercury ; sometimes mercury merely checks the disease, and

can scarcely be said to cure it ; in which case it seems important to support the strength of the constitution, and to keep up that mercurial effect which controls the disease, and can be borne without material derangement of the constitution for a great length of time. Sometimes also the use of mercury aggravates these diseases.

Again, in some constitutions, syphilitic disease may assume unusual characters, and be very difficult of cure. It must then be scarcely possible to discriminate between these anomalous cases of syphilis and those of diseases resembling it, unless some new distinctions are discovered.

But I suppress any farther observation on the subject, having accomplished the intention of this paper, which was to depict a kind of cases which very frequently occurs in this metropolis, and which is, I believe, too commonly treated as syphilitic, but which may be distinguished not to be so by a little prudent delay and attentive observation. The frequent cases of such disorders which I have recently met with has suggested the idea that they are increasing of late ; nor is it improbable, since they are, like syphilis, propagated by promiscuous intercourse from secretions or sores not so readily curable by mercury as those that are syphilitic, and some of which are not from their nature so prohibitory of that intercourse.

It is now many years since this paper was drawn out as a subject for discussion at a medical society ; and, after such an interval, the chance of any of the disorders which are described in it returning is diminished almost to nothing. I have since met with considerable numbers of similar diseases, which give confirmation to the opinion that they are frequent occurrences. In some later cases, when the disease has been long protracted, and the patient very anxious to get rid of it, I have given a little calomel for that purpose, but not so as to invalidate the opinion that the disease was not syphilitic. Having waited, for instance, four months from the occurrence of a sore throat with eruptions, and being assured by the progress of the disorders that they were not

syphilitic, I have directed that the compound calomel pills* should be taken in such doses as to control the disease without weakening the constitution, which generally disposes the sores in the throat to heal, but I have taken care to remit the use of even this small quantity of mercury if it seemed to heal the sores too speedily; for it seems to me better to let the disease exhaust itself than suddenly to cure it, as in the latter case it is very likely to return. In confirmation of this opinion I may mention, that, about five years ago, a gentleman applied to me to undergo a salivation for the cure of a sore throat, for which he had been salivated three times, once in each succeeding year. I need scarcely say that it was one of those ulcerated throats which have been described. All medicine was abstained from; and in between three and four months the sores spontaneously became well, and have never since recurred. The whole of this paper has been written upon the presumption that diseases which spontaneously get well are not syphilitic, which is, I believe, the general opinion. It may, perhaps, be questioned by some, whether the diseases here recorded may not be modifications of the venereal disease. The practical rules of conduct will not, however, be altered even if such a supposition were verified, so that it does not seem necessary to discuss this point; it may however be right to remark, that there are cases which would induce the belief that ulcerated sore throats, eruptions, and nodes on the bones, similar to those described in this paper, may occur from a general disturbance of the constitution, without the absorption of any infectious matter.

The object of this paper being simply to excite attention to such cases as are recorded in it, I did not think it necessary to enlarge much upon a circumstance which, however, is

* The pill, as prescribed in the pharmacopœia of St. Bartholomew's Hospital, contains 1 grain of calomel, 1 grain of the precipitated sulphur of antimony, and 2 grains of powdered gum guaiacum, combined by soap.

a strong evidence of the necessity of discriminating between such diseases and true syphilis. The circumstance to which I allude is, that though a course of mercury may at the time remove all the symptoms for which it has been employed, yet it will not cure the constitutional disease; for the symptoms will recur when the medicine has been discontinued after repeated and severe courses of mercury, as will be fully shown, by cases which I shall afterward relate.

Having written the foregoing account, I intended here to conclude, having, in my own opinion, accomplished my purpose, which was to prosecute in some degree the subject which Mr. Hunter deemed worthy of investigation, and to depict the circumstances of diseases which I believe very frequently occur, and which are often confounded with cases of syphilis, to the detriment of patients, and the discredit of our profession. But having requested the opinions of two of my medical friends on the foregoing paper, one of them said, that he thought the publication of it would be injurious, as it might induce the younger surgeons to abstain from the use of mercury, to the prejudice of their patients; the other gentleman said, that he thought more explicit descriptions should be given of the cases in which mercury should be withheld or employed. In consequence of these opinions, I am induced to take a closer comparative view of the diseases that are, and of those that are not, syphilitic.

I undertake the task reluctantly, because the brevity with which I must speak of these subjects may render my opinions liable to misapprehension, and because I do not feel competent to its proper performance. Yet by this means, I think I shall do away the objection of one of my medical friends; for I believe that I am myself more likely to err in recommending the too free than the too sparing administration of mercury in syphilitic diseases. Any surgeon who has observed the ruinous consequences of repeated mercurial courses in some constitutions, would probably err in the same manner: and his dislike to disorder the constitution by

mercury would probably lead him even to use it more freely than might be absolutely necessary: this he would do in cases clearly syphilitic, in order to prevent the possibility of the recurrence of disease, and repetition of a mercurial course. In doubtful cases, which are cured by exciting the mercurial action in the constitution, he would adopt a similar mode of treatment, in order to suppress the disease for so long a time as to make it less likely to recur; or if any subsequent disease should take place, to render it highly probable that this was not syphilitic, since it had broken out after such a course of mercury as must be considered to be adequate to the cure of almost any disease of that nature. By undertaking this task I shall perhaps comply with the wishes of my other friends, in stating more explicitly the circumstances which should induce a surgeon immediately to use or abstain from the administration of mercury, and, at the same time, contribute my mite of observation to those already offered on this still obscure subject of venereal diseases.

The most clearly marked syphilitic chancre has been excellently described by Mr. Hunter. The striking characters of the disease are, an ulcerating inflammation without any reparation, attended with induration of the surrounding parts. The description is, a sore of a somewhat circular form, excavated, without granulations, with matter adhering to the surface, and with a thickened base and edge.

There is another species of chancre in which the disposition to ulcerate is less than usual, and the disposition to indurate is greater; so that the ulcerated surface may heal, and leave an indurated knob or tubercle in the affected part.

There are besides some chancres in which the diseased action seems to be very inert; in these the ulcer is superficial, the thickening of the surrounding parts slight, and, after some time, the ulcerated surface acquires a state of health, and cicatrizes, without producing any perceptible granulations. I conclude that the truly syphilitic chancre sometimes assumes the appearances just described, because I have repeatedly considered the constitutional symptoms which

succeeded to such sores as truly syphilitic, yet I may have been deceived, for reasons which I shall afterward explain.

But it is impossible to depict by words the various sores, some of which are of a very irritable nature, that are produced by sexual intercourse, and through the medium of which the constitution becomes contaminated; neither is it possible to know from local circumstances whether they be syphilitic or otherwise. It is from their effects upon the constitution alone, that we can judge whether they were syphilitic or not. Many we know are not so, since they do not produce the constitutional effects of syphilis. The subject can alone be decided by future experience derived from watchful observation made by unbiassed men. Mr. Hunter thought that syphilitic poison might produce a sore which might be modified by the diseased propensities of the constitution and the part, and thus lose its distinctive characters.

Influenced by this belief, he speaks but briefly on the subject of chancres. I have also seen cases of constitutional disease, which I considered as syphilis originating from primary sores which had not the usual character of syphilis: the more, however, that I see of the subject, the more I am inclined to doubt the correctness of my opinions on this point; and of this I am certain, that the greater number of the constitutional diseases originating from sores, which have not the syphilitic character, differ materially in their progress and mode of getting well from those which are the consequences of true syphilis, and that they require a proportionate peculiarity of treatment.

However, if, according to the opinion of Mr. Hunter, the action of a syphilitic chancre may be sometimes so modified by the diseased propensities of the constitution, or part, as to form an ulcer scarcely cognizable as a syphilitic one, it follows as a general rule of conduct in practice, that surgeons are not to confide in their powers of discrimination, but in all cases of ulcers arising from impure intercourse, to act as if the sore was syphilitic, to give sufficient mercury slightly to affect the constitution, in order to guard against

the consequences of absorption, and, by local and other general means, to cure as quickly as possible the local disease, and thus remove the source of contamination, and the necessity for the continuance of medicine. The quantity of mercury necessary for the cure of a syphilitic chancre will never, I believe, be found to be so considerable as materially to disturb the constitution. We may, therefore, without hesitation, employ it in almost all cases of primary ulcers, and be guided as to its continuance or cessation, its increase or diminution, by the effects which it produces in the sore or constitution. Mercury in small doses inclines other sores to heal, as well as those which are syphilitic ; it may therefore act beneficially when the disease is not syphilis, and, by contributing to the healing of the sore, remove the source of contamination and the necessity for the continuance of medicine. It is surely an object of importance to get the local disease well as soon as possible, and topical applications often greatly contribute to this desirable event ; yet they should not be of a very irritating nature, for such means frequently aggravate the disease, as may be seen in some of the cases which are related ; nor should our applications be of an astringent nature, since by checking discharge, they incline the disease to become indurated, and it requires a longer continuance of mercury to remove a small induration than to heal a large sore. This observation applies equally to sores of a syphilitic nature and to others. Whilst there remains an induration, we can never be sure that it may not ulcerate again, upon leaving off the use of mercury, nor can we be assured that it may not contaminate the constitution. Indeed, in the syphilitic chancre, it seems best to use none but the simplest dressings ; for when it heals by the effect of mercury on the constitution, we are assured of the adequateness of the quantity which is employed to the intended purpose, and we have reason to believe, that the constitutional mercurial affection which has subverted the local actions of the disease, will have prevented its contamination by any matter that may have been imbibed from it. If then we may,

for the reasons above stated, employ mercury without hesitation in primary infected sores, being governed with respect to the degree and duration of its use by its effects, we ought, as has been shown in the preceding part of this chapter, to pursue the reverse conduct with respect to constitutional symptoms. Here we are required to hesitate, that we may learn the nature of the disease previous to attempting its cure. It has appeared to me, that a longer and more active operation of mercury on the system is necessary for the permanent cure of constitutional symptoms in true syphilis, than for that of the primary chancre. Here, if we use mercury unhesitatingly, we may employ it to an injurious degree, where it is not wanted, and we generally fail in preventing a recurrence of symptoms. These are, I believe, the general rules of practice adopted by the best surgeons, and they appear to me, in the present state of our knowledge of these diseases, to be judicious. One advantage results from this plan of conduct, which is, that if constitutional symptoms follow from a sore treated in a manner that ought to have prevented contamination of the habit had the sore been syphilitic, our suspicions are excited, and by attentive observation we may perhaps discover that the symptoms are of another nature.

In cases of anomalous sores it may be inquired, if in those, where the event renders it probable that they were of a syphilitic nature, the disease deviates materially from its common characters, that of an ulcerative process without reparation, and extending in every direction. Do these sores enlarge by sloughing, or produce granulation or fungus? Do they spread otherwise than nearly equally in their whole circumference? Does the ulceration extend in them only in particular directions? Do they heal in one part and spread in another? or do they suddenly amend and become worse without an adequate mercurial influence to produce such changes? Those infected sores which are not syphilitic, have such peculiarities, as have been shown in the first part of this paper; and as they are so very various, it becomes

necessary to distinguish them from those which are syphilitic, by accurately noting the progress of anomalous cases of the latter disease. It is extremely difficult to form any correct opinions on this subject on account of its intricacy, and the almost impossibility of abstaining from the use of mercury ; but it is a subject highly deserving inquiry, and which never can be fairly investigated till it be known that the secondary symptoms arising from sores may not be syphilitic, though their appearances cannot be distinguished from such diseases by sight alone.

With respect to sores that are not syphilitic, the difficulties of investigation are greatly multiplied. If a description cannot be given of syphilitic sores, it seems almost absurd to say any thing of those multiform sores produced by infectious matter, the qualities of which, it is probable, may be variously modified, and the effects of which appear equally liable to modification from peculiarities of constitution. Yet in this intricate subject there are certain facts which can be distinctly observed, and deserve attention. Some of these sores spread by ulceration, and some by sloughing, of which instances are related in the first section of this paper. Even Celsus has described several species of sores, which, as Dr. Adams has observed, we are acquainted with in the present day. I have never seen that phagedænic ulcer, which suddenly sloughs, affect the constitution ; neither do I believe that surgeons in general have remarked it ; those who regard all these sores as syphilitic attribute the absence of secondary symptoms to the chancre having been removed by the sloughing of the surrounding parts. Yet in the case related by Mr. French in Mr. Hunter's Treatise on the Venereal Disease, secondary symptoms did occur from a sore of this kind, and got well without mercury. It may therefore, perhaps be doubted whether this disease be not an aggravated form of the sore which sloughs more slowly, and from which the constitution is much more frequently affected. Though Dr. Adams has restricted the term phagedæna to one kind of destructive sore, yet I feel more inclined to

leave it as a generic term for all these destructive sores, and to divide them into species according to their peculiar characters. Then we may describe them as ulcerating phagedænic sores, and sores which spread by sloughing. Again, the ulcerating or sloughing process may extend not in all but in particular directions, and the sloughs may take place from the edges or from the whole surface. As Dr. Adams has treated these subjects at large, I refer the reader to his book ; but I will take upon me to describe some species of sores which frequently occur, and are treated generally as syphilitic, but which I am convinced are not so.

The sores, in one species alluded to, generally break out in succession, and sometimes after considerable intervals of time ; which circumstance, if remarked, would render it improbable that they arose from infection of the ulcerated part, since such sores would probably be contemporary. The ulcer is at first inflamed, and spreads ordinarily to the size of the finger-nail ; its circumference is thickened ; it throws out new flesh, which rises above the surrounding skin ; some times there is an appearance of several little cells or spaces in the interstices of the granulations, if they may be called so, owing to the whole ulcer not producing new flesh in an equal degree. The edges of the sore generally retain their diseased state after the middle has become healthy ; from this cause the healing of the sore is retarded. These sores are slow in healing under any mode of treatment, and they generally get well in the same succession as they broke out. They sometimes form in a circle round the orifice of the prepuce, and cause a contraction in that part after they have healed. I do not mean to say that all sores occupying this situation are not syphilitic, but merely to state, that sometimes after a gonorrhœa of the prepuce, either originally occurring there, or having happened by a metastasis of disease from the urethra, sores do break out in this situation at a remote period from the reception of the infection, which are not syphilitic. The sores which I am endeavouring to describe seem to be the consequence of an irritated state of the

prepuce, from which there is sometimes a slight general discharge, like that which takes place when the gonorrhœa shifts its situation from the mouth of the urethra, and becomes the gonorrhœa of the prepuce. The glands in the groin sometimes swell from irritation in these cases, and generally subside again, though I have known them suppurate : but I never saw any secondary symptoms succeed to this species of ulcer.

In the earlier part of my practice, in conformity to general rules, I used to give mercury in these ulcers to secure the constitution against infection, whilst I tried to heal the sores as speedily as I could by topical applications. Slightly destroying the surface with the *argentum nitratum* every second day, and dressing with the solution of *zincum vitriolatum*, were the local means which seemed to be most successful. An attention to the history of the disease, and frequent applications for advice from persons who had been severely and unavailingly sallivated for the cure of this species of sore, soon emboldened me to abstain from the use of mercury ; and I have never found, though I have met with a considerable number of instances, that I have in this respect acted wrong.

I shall mention the circumstances of a case which occurred to me no long time ago. A gentleman had a slight irritation in the urethra, and after a few days, found the prepuce a little swollen, with a small discharge from beneath it. This was checked by a weak solution of *zincum vitriolatum* ; and afterward three sores, such as I have described, broke out in succession, for which he used mercury so as to affect his mouth. The sores slowly healed, but two new ones made their appearance, and the mercurial course was persevered in. These sores also healed slowly, and a running came on from the urethra, no new sores having appeared. The mercury was left off, the gentleman came to town, and was much distressed to find that three other sores, exactly like the former ones, now broke out, but the discharge from the urethra had ceased. At this period he applied to me, and gave me the foregoing narrative of his disorder, with an as-

surance that he had exposed himself to no new risk of infection. I employed only local means for their cure, being satisfied by the history as well as the appearance of the sores that they were not syphilitic. Near a month elapsed before any considerable amendment took place, when a swelling appeared in the groin, and the sores healed suddenly in a few days. Leeches and Goulard's wash were employed to disperse the bubo, but in vain : it suppurated, and formed a very unhealthy abscess. There was a great deal of surrounding erysipelatous inflammation, the cuticle separated from the surface of the bubo, the skin became livid, and gave discharge to the matter by a partly sloughing and partly ulcerating process. This, however, proved the crisis of the complaint : the abscess having thus broken filled up, and healed in the course of about three weeks, since which the patient has had no return of disease. This gentleman was liable to have sores break out spontaneously on the prepuce ; they got well readily by bathing them with a weak solution of *zincum vitriolatum* ; and I believe that persons who have naturally an irritable state of the prepuce are most obnoxious to such affections. We must not, however, impute the occurrence of these peculiar sores to mere irritability, but to some specific contagion.

The discharge from the urethra in such cases is not considerable, nor attended with much inflammation or chordee, nor does it increase in violence ; it may, therefore, be easily distinguished from common gonorrhœa and its varieties.

Sometimes, in a common gonorrhœa, the disease shifts its ground and attacks the foreskin, and sores form about the orifice of this part. These are of a different nature from the sores which I have been describing ; their surface is generally glossy, not producing exuberant new flesh, and their colour is unhealthy. They generally get well as the disease returns to its original situation in the urethra. I merely mention these circumstances to induce attention, and to prevent surgeons from confounding the sores which I have been describing with any other similarly situated, but different in their nature.

I wish also to excite attention to another species of sores which I have frequently met with, and which differ considerably in their progress from those truly syphilitic. The first appearances of the sores are various, but in their progress a thickening in the surrounding parts takes place, whilst the centre is soft and less diseased than the circumference. I have seen the surrounding parts much elevated, and an opening leading into a cavity in the middle. I have seen them, on the contrary, heal with a flat surface, and acquire a circular hardness, the middle being quite soft, and the area of the circle gradually increase. I have known sores heal apparently well and smoothly, and afterward the edge has acquired a circular hardness like a ring of some firm substance.

In all these sores I have given mercury in doses short of producing a tenderness of the gums, and the disease has gradually but slowly got well. In the greater number of cases no constitutional affection has ensued. In some, however, it has, but it has got well without mercury, or with such small doses as would certainly not have cured syphilis. So that these observations concur with the history of the disease, in inducing me to believe that sores of this description are not syphilitic.

Under this head of sores which occur on the genitals, and which are not syphilitic, I may mention one species that I have several times seen on the side of the penis, which is herpetic, affecting new parts whilst those first affected get well; so that the sore may exist a long time, and be very troublesome, though its situations may have varied considerably.

I have also seen a circle of small sores, like what takes place in tinea, occur on the outside of the prepuce in consequence of some acrimonious secretions being applied to it in sexual intercourse. Some diseases, whatever may be their primary nature, do, after a time, extend themselves between the integuments and the subjacent parts. I have known many diseases which burrow in this manner treated as syphilitic, and, as the event of the cases has proved, improperly.

ly. Indeed, the progress of such diseases is so different from that of syphilis, that it is natural to discredit their being so. Diseases which proceed in this manner seem to be of an irritable nature, and to affect most those parts which have least powers of life, which appears to be the cause of their peculiar mode of extending themselves.

To corroborate this remark, that sores which burrow are not likely to be syphilitic, I may mention the case of a gentleman of the medical profession, who had a sore of this description, which began on the dorsum penis, near to the pubes, for which he rubbed in two months, and had his constitution considerably affected; nevertheless, the sore spread and burrowed under the integuments of the pubes, and the mercury was left off. The disease became communicated to a considerable district of the integuments of the bottom of the belly, and to those of the scrotum. The affected parts sometimes ulcerated, and sometimes healed. A great variety of local and general remedies were tried without benefit. No mercury was used except in very trivial quantity. The cavities beneath the skin were in some parts laid open, at different periods of the disease, but without much advantage. After two years and a half the disease became well, when nothing but simple dressings were applied, and when he took nothing but decoction of sarsaparilla and small doses of rhubarb.

I have in the foregoing pages endeavoured to represent briefly the circumstances of the primary ulcers of diseases which are, and of those which are not, syphilitic, and to state the general rules for the administration of mercury; and, at the same time, I have described some sores which have not, as far as I know, been distinguished, and which, in my opinion, are not syphilitic, though they are generally treated as such. To take a similar comparative view of constitutional diseases arising from these various sores would render this paper too prolix. I hope it will be seen that I do not presume, nor do I see cause, to deviate from the established rules of practice founded on the general ex-

perience of surgeons. It would indeed, in my opinion, be presumptuous in an individual to form general rules drawn from his scanty experience ; I may be allowed, however, to remark, that individuals of the profession are likely to err by inferences drawn from their own practice ; and it appears to me that some professional men at present are inclined to believe all sores arising from impure connexion to be syphilitic, whilst others may be too scrupulous in expecting all syphilitic sores to possess their common characters. The truth probably in this, as in other cases, lies between the extremes. Much however, it must be acknowledged, remains to be ascertained, and I think that those surgeons would do essential service to science, who would give an accurate account of the irregularities of the venereal disease. But such an account never can be given by one, who esteems all diseases syphilitic which resemble them in appearance. The foregoing cases will, I think, at least prove this to be fact ; and it was a principal incitement to their publication, that if this fact were generally admitted, it might excite that scrupulous attention and impartial observation of syphilitic diseases, which would probably lead to accurate distinctions, and the removal of that obscurity with which they have hitherto been surrounded. I have suppressed many observations of my own on this subject, from a belief that it is better to say nothing than to offer opinions not fully confirmed by facts. The idea that syphilis is a most variable and Proteus-like disease, has probably arisen from those irregular diseases which I have described in the first section of this paper having been confounded with it. The opinion is however prejudicial, as it checks attentive observation by declaring its inutility. If it should be in our power, as I should hope it may, by directing our attention to the history rather than to the appearances of these diseases, to distinguish syphilis from other complaints, then we may also be able to describe the irregularities of this disease. and to inform others when it assumes deceptive characters, and pursues an unusual track, what disguise it puts on, and what courses it follows.

SECTION III.

On the constitutional Origin of Pseudo-Syphilitic Diseases.

IN order further to elucidate the nature of pseudo-syphilitic diseases, I published some cases in which they originated spontaneously, or without there being any reasonable ground for supposing that morbid animal matter had been imbibed to contaminate the constitution. The cases included in this section were first published, among others which were designed to show the importance of correcting disorders of the digestive organs in attempting to cure local diseases. A disorder of those organs constantly exists in these cases ; and produces, or at least aggravates and protracts a state of weakness and irritability of constitution ; to which the origin of the disease must undoubtedly be referred.

CASE XII.

A gentleman residing in the country, who had been many years married, and whose moral character prevented any suspicion of his having exposed himself to venereal infection, had an ulcer in the right tonsil, possessing every character of a truly syphilitic sore. The figure of the ulceration was oval ; it had extended itself deeply, and presented a surface covered with adhering matter, and without the least appearance of granulations. It had continued three months without amendment, although various medicines had been employed during that period. These circumstances impressed the minds of the medical attendants with an opinion, that the disease was syphilitic. On me they had a contrary effect. I thought that a syphilitic ulcer would have become materially worse in that time, as mercury had not been used to arrest its progress. Finding that the patient had a furred tongue, and disorder of the digestive organs, I recommended,

as the first object of attention, the correction of that derangement of the stomach, from which the sore-throat had probably originated. The patient went to the sea-side, where his throat was alternately better and worse ; but the dimensions of the ulcer were not enlarged. Three months elapsed before I saw the patient a second time ; when I told him that my argument against the complaint being syphilitic was greatly strengthened. It was manifest that the disorder, to which I had imputed the sore, still existed. Being unwilling, however, that the responsibility should rest entirely upon myself, I advised him to consult another surgeon, who, judging of the nature of the sore from its appearance, (which indeed was strikingly characteristical of syphilitic disease,) recommended a course of mercury. The patient underwent, in consequence of this advice, a regular mercurial course ; during which the sore got well. Between two and three months afterward another sore formed in the palate, which had the characters of a syphilitic ulcer, in a still more striking degree, if possible, than the former. It was situated just where the soft palate proceeds from the bone. It was of a circular figure, and so deep as to expose the bone. The circumference of the ulcer was tumid and inflamed ; its edges were not smooth, but had a tendency to ulcerate. There was no appearance of granulations, and the discharge adhered to the surface of the ulcer. The patient now applied to me again ; when I repeated my original opinion, that these sores depended on the state of the health in general. He consulted another surgeon, who recommended the use of the Lisbon Diet-Drink, with the application of the oxymel æruginis to the part ; under which treatment, the ulcer healed ; and no other complaint has since occurred, though two years have elapsed.

CASE XIII.

A gentleman who was habitually subject in a great degree to disorder of the digestive organs, had an excoriation of the

prepuce, which had continued about three weeks, when copper-coloured eruptions came out all over his body, so strikingly similar to those which are venereal, that some of his medical attendants recommended the immediate use of mercury. It was however agreed to delay the mercurial course for a little time ; and to give the patient half a grain of calomel, with three grains of hemlock night and morning, and a solution of magnesia vitriolata in mint-water, so as to keep the bowels freely open. The spots began to die away almost immediately, and soon disappeared altogether. The patient then mentioned that he had several times had the same kind of eruption, which had disappeared in like manner upon taking some opening medicines.

In calling the reader's attention to those diseases of the bones which resemble syphilitic affections, I shall not pretend to relate any case in detail ; for surgeons can seldom trace the progress of these diseases for themselves, but are obliged to rely on the doubtful history given by their patients. I shall endeavour to sketch the principal parts of the subject, referring to particular cases, merely to show that the picture is not drawn from fancy, but is copied from nature.

I have been frequently consulted on account of supposed venereal affections of the bones ; where the periosteum has been thickened and tender, and the bone enlarged, and the concomitant pains have been so much aggravated at night as to deprive the patient of rest. The history of the case has removed all suspicion of a venereal origin ; while general indisposition, a furred tongue, loss of appetite, and other attendant symptoms, have clearly indicated great disorder of the chylopoietic viscera. By attending to the state of the digestive organs in these cases, the patient's health is amended ; the general rheumatic pains are diminished ; sleep is procured ; and the disease has receded almost entirely. After some time has elapsed, the bone may again swell, the swelling may again be checked, and return no more. Perhaps similar diseases may take place in other bones, at times very remote from the first occurrence of the disorder. If mercury

be not employed, there are decisive circumstances in the history of the case which proves that it is not syphilitic. Sometimes suppuration takes place, and exposes the bone : this occasionally proves a kind of crisis to the disease at that part. But the circumstances of these affections are so variable as to preclude a complete enumeration of their symptoms.

I shall briefly mention the cases of two patients, by whom I was consulted about the same time, in order to identify the diseases to which I allude. Both these gentlemen had been married for many years ; and there was not the least reason to suppose that any morbid poison had been imbibed. They became generally indisposed, had restless nights, pain in the head, and about the shoulders ; and a painful thickening of the periosteum of the tibia, with enlargement of the bone, took place. The chylopoietic viscera were disordered in both these cases. One gentleman had used mercury repeatedly to a considerable extent, which produced a temporary alleviation of his disease ; but his sufferings seemed to be augmented upon the cessation of the mercurial excitement. The other patient never used any mercury. They both experienced a considerable mitigation of pain from those medicines, which corrected the state of the chylopoietic organs. Their diseases were checked, and never became again so bad as before attention had been paid to the state of the viscera. Both these patients were better or worse as the state of the bowels varied ; and they both gradually, but slowly, recovered.

Similar diseases are so common, that I believe every surgeon of experience will admit that affections of the bones, with wandering pains, often occur from general disorder of the health. I have never seen these cases unaccompanied by disorder of the chylopoietic organs ; and I have always found them most benefited by whatever has tended to rectify the functions of these organs.

There was no reason, in any of the cases alluded to, to suspect the absorption of poison. I will add another, to

corroborate this statement. A gentleman, who had been married about eight years, and had no venereal disease during that period, was seized with a violent fever. Shortly after his recovery, a thickening of the periosteum on the parietal bone took place. The scalp was also much swollen, so as to threaten suppuration. He was at this time in ill health, and had great derangement of the digestive organs. By attention to this latter disorder, the swelling subsided, and no trace of it remained. The patient afterward went into the country, where his health was still more amended. In about twelve months he had several tumours of the same kind in different parts of the cranium; one alone threatened to suppurate: for these he underwent a mercurial course, which relieved them, so as to induce him to persevere in it to an extent, which almost constantly cures venereal disease. His health, during the latter part of the mercurial course, being much disordered by the medicine, his diseases became proportionally aggravated; he therefore desisted from the use of mercury; at which time his complaints were but little better than at their commencement. These diseases, however, gradually got well in the space of little more than a year; still the patient continued in a bad state of health, the symptoms of which were a furred tongue, indigestion, and faulty biliary secretion.

I add another case, which came under the observation of Dr. Baillie. A student of medicine, who attended the lectures in Windmill-street, was observed to look very much out of health; and, on inquiry, it was found that he had nodes upon his shins, which so exactly resembled those that are venereal, that no doubt was entertained of their being of that nature. It was therefore earnestly recommended to him not to delay the mercurial course, which seemed requisite for the cure. He was very reluctant to comply with this advice, and declared upon his honour that he had similar swellings before he had had any sexual connexion. This declaration made this proposal to be laid aside; and the nodes got well by a strong decoction of sarsaparilla, without a single grain of

mercury being employed. Now, if this account be accurate, it shows that diseases like syphilis can arise from disorder of the health, even without any sexual intercourse.

All surgeons of experience will, I believe, admit that diseases resembling syphilis occur from disorder of the health in general. In all the cases which I have instanced, there was not the least reason to suppose that any morbid poison had been imbibed to produce the diseases which existed. I wish much to have this point ascertained or refuted by the general experience of surgeons. The cases, which would tend to establish it, must be of rare occurrence. Most of the instances, to which I have alluded, occurred in men who had been long married, and on whose veracity I could rely. There is also, in my opinion, sufficient intrinsic evidence in each case to prove that the disease was not venereal. It was this kind of cases which I had in view in my last publication, in discussing the question whether those diseases, which may be denominated pseudo-syphilitic, arise from some modification of the venereal poison, or from a peculiarity of constitution in the patients, who are exposed to the action of truly syphilitic virus. I have there said, that "it deserves to be observed that diseases resembling syphilis do occur, without any reason to suppose that any morbid poison has been admitted into the system." I have been induced to dwell upon this subject, which may, perhaps, be considered more speculative than useful, because if the opinion were verified, it would explain the occurrence of pseudo-syphilitic diseases in a very striking and satisfactory manner. If local diseases resembling syphilis may take place in the throat, skin, and bones, from a certain state of weakness, and irritability of constitution, then various modifications of animal matter being absorbed may so disorder the general health as to induce such a state of weakness and irritation, as is likely to produce those symptoms, and such symptoms are rather to be regarded as arising from the propensities of the constitution, than from the peculiar properties of the matter which has been imbibed. It is shown in my former publication, that the poison

which produces pseudo-syphilitic symptoms is sometimes absorbed without an evident breach of surface in the skin; sometimes from a trivial sore which soon heals; whilst, in other cases, it produces local sores of various and dissimilar characters.

SECTION IV.

On the Effects of Mercury in Pseudo-syphilitic Diseases.

HAVING thus, by the publication of the cases related in the two preceding sections, endeavoured to excite a general investigation of a subject which I think every one will admit to be highly important, I proceed to relate some additional cases of diseases which I consider as pseudo-syphilitic, and in which mercury was employed for their cure, in order to show the effects resulting from its use. I was necessarily precluded from bringing forward such cases in my first attempt to elucidate this subject, because my object at that time was merely to show, that diseases, which could not by sight be distinguished from syphilis, yet differed from it in the primary sores from which they originated, and also in their progress; for they got well without the administration of mercury, and generally recurred after the severest course of that medicine. The latter fact will, indeed, be more strikingly manifested by the succeeding cases. I was also prevented from relating cases of this description, because the administration of mercury may be supposed to render the nature of the subsequent symptoms ambiguous; since they may be considered as the effect of that disorder of the constitution, which the poison and the antidote have conjointly produced.

As the tide of public opinion seemed at that time to run strongly against me, I mentioned, that any experienced surgeon, who regarded the cases in question as anomalous cases of syphilis, would do a most essential service to society, if he would lay down practical rules for the treatment of such diseases. As no one has undertaken this task, I shall endeavour to accomplish it; for I think, that the cases which I shall relate will at least show what mercury will do, and what it will not do, in these diseases. An attempt to establish rules for the treatment of these diseases appears to me of

great importance ; because discordance of opinion is both discreditable to the profession, and injurious to patients.

Before, however, I relate the facts from which I mean to deduce the practical rules of treating these diseases, I wish briefly to recapitulate the reasons which induce me to think that they are not syphilitic ; and also to advert to the arguments which I have heard brought forward, by those who entertain a contrary opinion. I wish, also, to consider the effects likely to be produced on the constitution at large, by the absorption of morbid animal poisons ; and to discuss the probable effects of mercury, administered in different degrees ; because I think it necessary, that all these circumstances should be borne in mind, whilst the reader peruses the cases, in order that he may form a proper judgment of the nature and treatment of these perplexing diseases :

I concur then with Mr. Hunter in opinion, that these diseases are the effects of kinds of animal poison different from that which produces syphilis, first, because they may be contracted from parties who have no syphilitic disease ; and that I perceive how they may be contracted at present, as they were in Rome, during the time of Celsus.* Secondly, because I see such diseases occurring in persons whose constitution is disordered, but where there is no reason to suppose that any poison has been imbibed.† Thirdly, because these diseases differ from syphilis, in often getting well without mercury, and in recurring after the severest courses of that medicine.‡ Yet I wish, as a comment on the latter clause, to observe, that though it may be regarded as a general rule, it is not absolutely without exceptions. We have sometimes recourse to the use of mercury, on account of the destructive progress of diseases, which we have the strongest reasons to believe, are not syphilitic ; and mercury sometimes cures these diseases, without relapse. It is,

* See the cases related in the preliminary remarks.

† See the cases related in the 3d section.

‡ See the cases related in the 2d section.

indeed, not improbable, that the alteration, which mercury produces in the state of the constitution, may occasionally cure a disorder which is not syphilitic. Formerly, when I met with a case in which the constitutional symptoms were regularly progressive till mercury was employed; if they yielded, and were cured by an adequate course of this medicine, I concluded that the disease was syphilitic; and I regarded, therefore, any deviation which I might have observed in the progress of the primary sore, as the effect of some peculiarity in the patient's constitution. Of late, however, I have thought this inference to be erroneous.

I shall next advert to the arguments of those who think differently. First, it is said, that the spontaneous cure of these diseases is no proof that they are not syphilitic. Secondly, the peculiarity of the disease is accounted for by peculiarity of the patient's constitution, which may not only contribute to modify the disease, but also to prevent its ordinary cure by mercury; because the constitution may be incapable of bearing at once so much mercury, as is necessary for its cure. Cases, however, stand in direct opposition to these opinions. For these diseases may be contracted by persons of very healthy constitutions; and I have known patients, who have contracted pseudo-syphilitic diseases, contract also real syphilis, both a short time before and after the pseudo-syphilitic affection. Further, in many persons who are the subjects of pseudo-syphilitic diseases, the disease recurs without the intervention of any new exciting cause, even though a mercurial course has been submitted to, greater in degree and longer in duration than is necessary for the cure of true syphilis, even though the mercury has also acted on the patient's constitution, in the most regular and complete manner. It is, indeed, highly probable, and accordant to general observation, that these diseases will be greater and more obstinate in weak and irritable constitutions, than in those that are healthy, and this circumstance has probably given rise to the preceding suppositions.

I wish also to consider the probable effects which would

be produced on the constitution from the admission of morbid animal matter into the circulation. Such infectious matter is likely to produce irritability or weakness of the nervous system, and consequent general disorder. The nervous disorder is likely, more especially, to disturb the functions of the digestive organs, and by their reaction to become prolonged and aggravated. In almost every case of pseudo-syphilis, a disorder of the digestive organs is manifest, and in many, most evident benefit is derived from correcting this, as far as we are able.

It is probable, that the disorder of the nervous system and constitution in general, will be more transient in some constitutions than in others; and is likely to be prolonged by every thing that induces debility and irritability. Indeed, if we have no specific remedy, or means for counteracting the effects which the poison has produced; the rational indications of treatment would be to tranquillize and strengthen the system, in the expectation, that the effects resulting from the action of the poison will gradually subside. Analogy would lead us to expect, that the disorder of the nervous system, induced by the operation of the poison, would, as it declined, become intermittent, and recur in paroxysms. I have premised these observations, that the reader may bear them in his mind, during the perusal of the cases, assuring him, at the same time, that they are the result of practical remarks.

I wish also to explain my ideas respecting the operation of mercury. First, small doses of that medicine do not seem to affect the constitution in general, but merely to act upon the digestive organs; yet by this operation they are often productive of the most important benefit, as has been shown by cases recorded in the first volume of these observations. As in diseases produced by the absorption of morbid poisons, the digestive organs are disordered, in consequence of nervous irritation, and in some patients, in a most remarkable degree, owing probably to a predisposition to disorder in them, so an attention to keep these organs in as correctly natural a state as possible, is an object of primary

importance. Secondly, mercury exhibited in larger doses, exerts an influence on the constitution in general, though scarcely perceptible by its effect upon the pulse or secretions; but by affecting the nervous system, in a peculiar manner, and by inducing a specific state of constitution, it counteracts that morbid irritation which has before prevailed, and is the effect of the poison. Thus mercury relieves many other disorders, as well as those which are syphilitic. The dose which is necessary to produce such effects, must vary in different persons. Such a state of mercurial excitement, or action, as is necessary to produce these effects, may also be kept up without inducing debility;—on the contrary, patients frequently become stronger and more healthy under its influence, because it controls the irritation attendant on disease. Thirdly, a greater mercurial effect upon the constitution produces an acceleration of the pulse, renders the constitution in general irritable and weak, and produces a more evident and considerable disorder of particular organs. Such an affection cures completely and radically syphilitic diseases; whilst others, which had been checked and cured by a slight mercurial affection, often increase and break out again, under that which is greater in degree. This violent action of mercury never fails to weaken and disorder the constitution in general; and thus, with its powers impaired, and its functions deranged, it has still to endure the continuance of the disease.

The cases, which I shall now bring forward, are selected, because I think they show as great a variety of circumstances incidental to these diseases, as could be displayed in an equal number of examples. I could have crowded the book with instances, tending more directly to illustrate and confirm the opinions delivered in it. My object has, however, been, not to represent the subject as more clear than it will appear in practice.

CASE XIV.

A medical student had without any previous chancre, an indolent bubo, which had increased in the course of two months to the size of a small egg, at which time I first saw him. After about three weeks, it inflamed and suppurated. The inflammation was of an unhealthy nature, and the bubo ulcerated, forming a foul ulcer, about three inches and a half in length, and two and a half in breadth. During this process he was much disordered in his health, and he confined himself to his bed. Lint, moistened with a watery solution of opium, was applied to the sore ; it was covered by a dressing of spermaceti cerate, and linen moistened in some wash was applied over, all to regulate the temperature of the part. Under this treatment the sore granulated, cicatrized, and had contracted into a small compass, when the patient's health again became disordered, and an ulcer formed on the upper surface of the *velum pendulum palati*. He snuffled in speaking and blew from one nostril thick mucus, some matter, and occasionally blood. Pain extended in the course of the eustachian trumpet towards the ear.

His disorder was so troublesome at night as to preclude sleep, and his situation was altogether so uncomfortable as to induce him to have recourse to mercury. He accordingly rubbed in two drachms of mercurial ointment, for ten successive nights. In this time the mercury produced a slight effect upon the gums, and relieved him so much, that he determined, notwithstanding my remonstrances, to discontinue it, feeling himself perfectly well. In about six weeks subsequent to this, he had a painful affection of the upper part of the tibia, attended with a collection of fluid under the fascia. He was feverish at night, and had but little sleep ; his stomach and bowels were during the whole of the disorder, affected in the manner I have described in the first paper ; he had no appetite, and when he was most indisposed his tongue was extremely furred. He again used

mercury, but after having rubbed in about six times he discontinued it, as he found himself worse, which he attributed to the use of the mercury. The disorder of his leg did not increase, but after some little time diminished still, however, it prevented him from walking about, and he had occasionally fits of pain in it, which after continuing for a few days, abated, so as to leave him comparatively easy. Thus his leg continued from about February to June, when he took lodgings in the country. He had, about a month after the affection of his leg a similar attack in the elbow, the progress of which was also similar. His health was improved by his residence in the country, and he was soon able to walk about, which contributed to his recovery. He for a few days took a little hydrarg: muriat: in decoct: sarsæ: but left it off by my desire, as I was convinced that his disease was not syphilis: and as the symptoms were declining spontaneously. He was once or twice induced to besmear the skin with mercurial ointment; but excepting this, he used no mercury, and by the autumn of the year, all local disease had left him. His health, however, was not correctly, right his tongue remaining furred, and his bowels irregular. He passed through the winter without any relapse. In about a year afterward he had some rheumatic complaints, from which he soon recovered, and has continued well since, except that he has been subject to occasional returns of rheumatism.*

* The chief circumstances, which seem to me to deserve attention in this case, are, that probably infectious matter was absorbed, without any evident breach of surface or primary sore; that the constitutional symptoms were at first suddenly cured by a small quantity of mercury; that afterward the use of mercury rather aggravated them, in consequence of which it was discontinued; that the disorder of the constitution afterward gradually subsided; and that the whole of the mercury employed seems quite insufficient for the cure of syphilis.

CASE XV.

A gentleman about thirty years of age, of a healthy robust habit, had a sore behind the corona glandis, which I saw on the third or fourth day after its appearance. It was then nearly as large as the nail of the finger, and so deep as to descend to the ligamentous substance of the corpus cavernosum penis. It was indurated in its circumference, and there was no appearance of any new growth from its surface. This ulcer appeared to me to have been too rapid in its progress to be syphilitic; however, as it had most of the characters of sores of that nature, I recommended the patient to take fifteen grains of the pilul: hydragyr: daily, to bathe with milk and water, to be very gentle in the application of mild dressings, and to keep the penis surrounded by some linen moistened with a cooling lotion. After a fortnight had elapsed, an enlargement of the glands in the right groin took place; and as the sore had not spread, I recommended him to rub two drachms, by measure, of mercurial ointment, into the right thigh every night, wishing to produce an evident mercurial affection of the constitution, with a view to discover what effect it would have on the sore. In about a week, the constitution was affected by the mercury, and the gums were slightly tender and swollen; the sore was, however, rendered worse; it became enlarged, and inflammation took place round it. The inunction was therefore omitted, but the pills were continued. As the mercurial irritation subsided, the sore became tranquil, and the bubo stationary. In about five or six weeks from the beginning, granulations appeared and the sore began to heal, so that by the seventh week it was quite well. In healing, that edge which was next the body got well first, while the other rather spread, so as to encroach a little on the back edge of the corona glandis. The bubo gradually subsided. When the sore was healed, (the patient still continuing the mercurial pills,) he was seized with difficulty of swallowing, and uneasy sensations on the upper part of the

soft palate, causing him to snuffle in speaking, and to blow his nose frequently. I advised him to desist wholly from the use of mercury, that these constitutional symptoms might go on unchecked by that medicine, observing at the same time, that if they were syphilitic, and required the use of mercury, it might be used with more freedom, and perhaps effect, in consequence of this suspension. The disorder rapidly increased, and it was much worse in the night, when the sensations were so disturbing, that the patient could obtain no rest. The pain extended to the ear, and matter and blood were sometimes blown from the nose.

The health of the patient was much disordered; and as he said that no course of mercury could harass and weaken him so much as the continuance of this disease, it was agreed in consultation, that he should begin a mercurial course, and that the disease should be treated as syphilitic. The patient confined himself to his chamber, and rubbed in two drachms, by measure, of mercurial ointment every night. In the course of a week the disease was much mitigated; in a fortnight, at which time the gums were swollen and tender, it was well. The mercury was continued (so as to keep the gums as sore as they could be, without producing that state of disease which would have obliged us to desist from the use of it) for three weeks more, when a new occurrence took place. The left tonsil became somewhat enlarged, and an ulcer was formed upon its surface. This, another surgeon who was consulted, attributed to mercurial irritation, whilst I, on the contrary, felt assured that it was the effect of the disease breaking out anew under the full effect of mercury. As the course of mercury was deemed perfectly adequate to the cure of syphilis, it was now discontinued. The ulcer however continued to spread, nor did it cease till it had entirely destroyed the tonsil, when it healed. About three weeks afterward, and six weeks after the disuse of mercury, a similar ulcer formed on the opposite tonsil, which pursued exactly the same course, and ended in the same manner. After about three weeks more an ulcer appeared to have

formed upon the upper surface of the velum pendulum palati, in a situation corresponding to the first, but on the opposite side. It was attended with the same difficulty of deglutition, alteration in the voice, occasional discharge of pus and blood from the nose, and tormenting pain extending to the eustachian trumpet. It seemed in vain to use mercury, and I felt great apprehension that this ulcer might destroy the soft palate. It fortunately happened otherwise; for (after continuing for about a fortnight to spread, so that its edge could be distinctly seen on the margin of the velum palati, and left side of the uvula,) it healed, leaving no greater imperfection than what was produced by an adhesion of the left side of the uvula to the soft palate, which took place during the healing of the ulcer. After this complaint was well, various eruptions appeared on different parts of the body, many took place on the head, forming sores which were slow in healing, and many sores, which were formed in like manner on the trunk of the body, became herpetic, healing in one part and spreading in another. An inflammation and induration of the coverings of the lower part of the right tibia also took place, which subsided, so as to leave but little appearance of any disorder having existed. During these occurrences the patient took the decoct. sarsæ, and Lisbon diet-drink, nitric acid, cicuta and bitters, and was as attentive as possible to keep his bowels regular, which was difficult, as his digestive organs were throughout the whole of the complaint disordered. He had also lived a good deal in the country, and made occasional excursions to the seaside, and used the tepid salt water bath. Upon his return from one of these, about six months after the discontinuance of mercury, he felt himself so perfectly well, that he indulged himself in dining with his friends, and undertook a journey into the country on business. The exertion attending this undertaking seemed to have operated in reinducing disease, for he was soon laid up with a rheumatic affection of the right foot, and one of the testes became enlarged to a considerable degree, but it was indolent. Nodes also appeared

on the middle of either tibia, which regularly increased. The enlargement of the testis subsided, when the other became affected in the same manner. For between two and three months after the patient's return to town he consulted various surgeons, who knew nothing of the history of his case, and they so uniformly concurred in affirming it to be syphilitic, that the patient was even anxious to use mercury again. As the nodes did not abate as the other symptoms had, and as they did not yield to the application of leeches, evaporating lotions, or bandages, I thought an alterative course of mercury at this period even advisable, to see if it would control this local affection. The nodes were not like venereal nodes. They were elevated and bony, and there was a small quantity of fluid beneath the periosteum. I would have divided the periosteum at first, but I was restrained by the apprehension of the wounds becoming sores, and of exfoliation taking place, and augmenting the patient's already distressful situation. He now rubbed in small quantities of mercurial ointment, without confining himself. This course was attended with manifest benefit; insomuch as to impress his mind with an opinion that a more liberal use of mercury would now cure him. In this opinion he was confirmed by some surgeons whom he had consulted, and he therefore resolved to stay at home and rub in every night till his constitution was affected by mercury. By the accomplishment of this object, however, he was made materially worse. His pains were tormenting, the nodes inflamed, and threatened to ulcerate. The mercury was left off, and I divided the periosteum to the extent of an inch and a half on the surface of one node, and let out some serum mixed with pus. The knife in passing down grated against different portions of bone which were heaped up to a considerable height above the level of the tibia. The node was no longer painful. The wound healed, and pain occurred again in a slight degree and gradually increased. The same treatment was pursued with respect to the node on the other shin, and the consequences were the same. After the wounds had healed the pain

gradually returned, and in about a month he found himself nearly in the same state as before his confinement. Under these circumstances he again began to take diet drink, with some mild mercurial pills, which never perceptibly affected his constitution, and under the use of which he became muscular and fat, and by this treatment the pains left him, and in the course of three months he was well.*

CASE XVI.

A gentleman between twenty and thirty years of age, residing in the country, had an ulcer in the prepuce, which, to use the words of his surgeon, had more the appearance of excoriation than chancre ; it was succeeded by a bubo and ulcerated throat. For each of these diseases he used mercury so freely as to convince some of his medical attendants that the disease could not be syphilitic ; his surgeon said enough to cure twenty syphilitic patients. The ulcers in his throat were sometimes better and sometimes worse, both during the continuance and after the cessation of the mercurial course. After about a year and a half from the commencement of the disease I first saw the patient, and informed his surgeon, that in my opinion pseudo-syphilitic diseases generally gave way to an alterative course of mercury conjoined to decoction of sarsaparilla.

* The principal circumstances worthy of remark in this case are, that the primary sore, though resembling syphilis in many respects, differed in others. It was aggravated by the free use of mercury, and it healed on one side whilst it spread on the other. The constitutional symptoms were speedily cured by a slight mercurial affection, but they broke out again under a severe course of mercury. Many constitutional symptoms got well without the use of mercury, and when at last it was employed again on account of the stubborn nature of the nodes, these diseases yielded to a slight, and were aggravated by a severe course of mercury. The disease lastly yielded to an alterative course of mercury, so slight as not manifestly to affect the constitution, and during which the patient got muscular, fat, and healthy. The subject of this case was a remarkably healthy man, and had before contracted syphilitic diseases, which were regular in their progress and cure. Mercury also affected his constitution in the mode which is considered most desirable for the cure of syphilis.

About nine months afterward the patient came again to town ; his throat was not ulcerated, but his nose was greatly diseased. Some affection of that part had taken place when I first saw him, which had increased to such a degree, that he was almost constantly blowing from his nose tough mucus and pus, mixed with blood. The skin covering the ossa nasi was also very red, so as to threaten the giving way of the arch of the nose. He was much emaciated and feeble, and had a chlorotic appearance.

Under these circumstances, I desired him to drink a pint of decoction of sarsaparilla daily, to keep his bowels strictly regular, and to take five grains of the pilul. hydrarg. every night, desiring to see him at the expiration of a week. After that time, when he called on me, he said he could perceive no difference whatever in his disease. Thinking that perhaps in another week the mercurial effect would be increased, so as to affect the constitution and control the disease, I made no alteration in the quantity of the medicine ; but when at the expiration of that time, I found the disease undiminished, I recommended him to take five grains of the pilul. hydrarg. night and morning. After the expiration of another week, when he called upon me, he said that the disease of his nose seemed gone, though when he blew it some purulent discharge still took place. The mercury had no effect upon his gums, and he looked more healthy and felt stronger than he had done before he began the mercurial course. Finding the disorder so completely subdued by this quantity of mercury, and wishing above all other considerations, that the patient should acquire some muscular strength and vigour of constitution, I advised to take but one pill daily for the future, and to observe whether the symptoms subsided or increased under its use. In one week more there was no discharge from his nose, even when the air was forcibly driven through it. And after three weeks had elapsed, or at the end of six weeks, he had become so muscular, fat, and healthy looking, as to produce the greatest astonishment in all who had seen him before, and saw him after that short interval of time.

This surprising recovery must be ascribed to the youth and strength of his constitution relieved from disorder. I mention it particularly, to show that the quantity of mercury that controlled the disease did not weaken the constitution. When the patient returned into the country, I recommended the continuance of the pills every other night for some time, to prevent any relapse; but I was informed that he soon left them off, and has since had no disorder.*

CASE XVII.

A gentleman had a trivial sore upon the prepuce, and being engaged to marry in the course of a few months, he underwent what was considered as a more than adequate course of mercury, for the cure of the disease. After he had married, however, his throat ulcerated. His surgeon hesitated in pronouncing it to be syphilitic, and its progress contra-indicated that supposition, for one sore healed and another broke out, or ulceration again ensued in the same place. One of the testis afterward became considerably enlarged without pain, and sores broke out upon the scrotum, which was much thickened, and in the perinæum. Six or more months passed during the progress of the disease to this state, when I was first consulted on the case. It was in the spring of the year, and we agreed that he should spend the summer at the seaside. During this summer the sores on the scrotum healed, and it regained its natural state. The swelling of the testis subsided. His throat occasionally ulcerated and healed; but a kind of disease seemed to spread along the alveolar pro-

* When a disease resembling syphilis attacks the nostrils, we are almost compelled to use mercury, since we cannot see the character, extent, and progress of the ulcer; yet extensive experience demonstrates in a manner horrible to observe, how many such diseases pursue a most destructive course uncontrolled, nay, often aggravated by the most powerful effects of mercury. The cases above recited, I therefore deem worthy attention, as they show that diseases resembling syphilis may occur in the nose as well as elsewhere; and that our practice should be regulated by the same principles in treating these, as in other symptoms of venereal diseases.

cess from behind, for the teeth loosened and came out, and in some parts the gums ulcerated. This happened on the left side of the mouth, and it advanced as far forward as the first small grinder, which still remained firm. In November he remarked, that whenever his stomach and bowels were disordered, his complaints were aggravated ; and by the means which were suggested for regulating those organs, he passed through the winter without any increase of disorder. In the succeeding summer sores broke out again on the perinæum, and by the side of the rectum, which healed under dressings of red præcipitate ointment. He had also a slight enlargement of the testis, which soon got well. In the succeeding autumn the disease in the alveolar processes seemed to trouble him, and there was a slight discharge from the nose. I had recommended him to abstain from the use of mercury while his disorders were stationary ; but fearing that there might be an increase of disease in this part, I advised him to take the compound decoction of sarsaparilla and one of Plummer's pills night and morning. Under this treatment he soon recovered, without any perceptible effect of mercury on his constitution, and has remained well since.

Though I feel pretty confident, for the reasons stated in the preliminary observations, as well as those contained in the third section, that many diseases which resemble syphilis do not originate from that poison, I am by no means equally certain, that none of the cases which I am now promiscuously relating, might not have arisen from that source. Such an assertion would be to deny the possibility of the effects of syphilitic poison being modified by the diseased propensities of the constitution. It would be also to affirm that there is only one kind of syphilitic chancre, and one kind of constitutional syphilitic disease, which is far from being my intention. I merely state, that when the primary sores differ materially from the ordinary characters and progress of syphilitic chancres, that they may fairly be suspected to be of a different nature ; and that in general the constitutional symptoms will be found equally to deviate from the progress

of syphilis, and, consequently, to require a different mode of treatment.

I proceed to relate some cases of this description, and to give an account of the constitutional symptoms subsequent to these kinds of sores, in a few cases, that the reader may judge of them for himself.

CASE XVIII.

On burrowing Sores.

A gentleman, forty years of age, who had lived very freely, in the month of July, 1806, contracted a sore between the prepuce and glans penis, near the frænum, which he believed to have originated from some acrimony in the secretions. This probably was the opinion of his surgeon, as he merely recommended cleanliness, and a poultice, until the spreading of the sore induced him to use mercury. A considerable swelling of the prepuce was occasioned by the irritability of the sore, which continued to spread by ulceration forward, so as to extend over the whole of the lower half of the glans, to within the eighth of an inch of the urethra, and backward between the integuments and lower half of the body of the penis for more than half way to the scrotum. It did not prevent him from denuding the glans, and cleansing away the discharge in some degree, but the extent of the sore backward could not be seen. It had continued to spread gradually for more than two months, although the mouth was affected by the use of a great deal of mercury. His constitution was much enfeebled, in a great measure owing to the mercury he had used. In this state he came to London, and consulted me. Fearing that the sore might continue to spread if the mercury was laid aside, I desired him to rub in every second night so as still to keep his constitution under the influence of that medicine, while I endeavoured to correct the sore by local means. Various washes were tried; for instance, weak solutions of sulphate of zinc, and nitrate

of silver, calomel, and muriate of mercury in lime water. In less than a month the sore was nearly healed, except in that part which covered the urethra about half-way below the penis; and here the ulceration seemed kept up by the escape of some urine from the canal, and he had at this time a frequent propensity to void his urine. It appeared probable, that the urethra had not been in a sound state prior to his contracting this complaint, and that it had derived additional irritation from the proximity of the sore to the mouth of the canal, as well as from that part where its ulceration had occasioned an opening. At this time an indolent enlargement of the right testis took place, and so large a hydrocele was formed, that I was much inclined to puncture it, to relieve him from the inconvenience occasioned by its weight. The patient, however, was anxious to return into the country, where he was directed to continue the same mild mercurial course. In January, 1807, he returned to town, and during the interval the hydrocele disappeared, though some enlargement of the testis still continued. The aperture of the urethra had inflamed and ulcerated, leaving an external sore. The other part of the penis, which had been ulcerated, continued firmly healed. His health, however, was much disordered. He had a rheumatic swelling of the finger, and a node upon one shin, with rheumatic pains in various parts of his body. Finding constitutional symptoms apparently originating from a sore, for which from its commencement mercury had been used unremittingly, I advised him to discontinue rubbing in, and he went to Bath in pursuance of the recommendations of some of his friends. I previously, however, introduced a bougie, and found several strictures in the urethra, which had probably existed before he had contracted the other complaint. As a bougie of a moderate size passed through the urethra, I merely advised local warm bathing. During a month's residence at Bath, he suffered much from pains in the tibia, but the nodes had not increased during that period. An ulcer larger than the surface of a shilling, with thickened inflamed and spreading edges, deep

in the middle, and without granulations, had formed near the outer angle of the orbit of the eye. Some sores of the same nature, but less in degree, took place also on the arms. Wishing to know if these symptoms were truly syphilitic, I determined to try if they would get well without mercury. A poultice of bread and water was applied to the sore on the face at night, and a dressing of simple cerate in the day. The edges of it were occasionally touched with argent. nitrat. to control their fretful disposition, and under this treatment the ulcer healed. The patient was anxious to return into the country; and as I thought that his health might be better than in town, he returned to his own house, with an injunction not to use mercury if it could be avoided, and there his pains in a measure subsided. After some time, however, the nodes on the shin became more prominent, though less painful. The nostrils also became very much affected by the disease. He blew from them pus in a fluid form, and concrete lumps resembling (to use his own words) "the internal parts of the nostrils;" "but this," he continues, "gradually went off, leaving the nostrils as clear as before. My general health now improved, and encouraged by this circumstance, I was induced to make a journey to London in the month of June, where I lived more freely than before, and took fresh cold. Upon my return home, I had a recurrence of the pain and swelling in my shin bones, and the pain of the legs to so great a degree, that it was esteemed prudent to consult a physician, who recommended nitrous acid, two mercurial and an opiate pill at night. Milk diet was also recommended, which constituted my principal food. The acid was continued a fortnight, the pills about a month, but little relief from pain was experienced. The nodes gradually lessened, but the pains were unabated, and occupied my knees and ankles as well as shins; they continued during the night, and remitted in the morning." On the weather becoming very cold, he was recommended to pass the winter in some warmer place than the situation in which he resided. He came to town and consulted Dr. Baillie as well as me. He was

advised to take the decoction of sarsaparilla, with a small quantity of hydrarg. muriat., and to control the night pains with extract of henbane. This plan answered very well, and he returned into the country, where he said his stomach was so much nauseated by the medicine, that he was obliged to leave it off. He came to town again in the beginning of January, 1808, in a very emaciated and crippled state, owing to rheumatism. His nights were passed in great pain, and thus terminated in profuse perspiration in the morning, so that he seldom rose till past noon on the following day. He was scarcely able to walk, and dreaded the least exposure to the air, which considerably aggravated his pains. Some sores had again broken out upon his face, and one of the largest was situated on the front of the ear, extending over the tragus, the discharge from which generally filled the concha, and this obstruction, together with the irritation, made him very deaf. I had often expressed to the patient my conviction that an alterative and undebilitating mercurial course would temporarily cure his disease, but wished to see him when that medicine was employed, that I might observe its effects. He now took a pint of decoction of sarsap. daily, and five grains of the pill. hydrarg. every night, and in about a fortnight he was so much recovered that he was able to ride out, which he did as often as the weather permitted. At the end of the third week, he went into the country, a short distance from town, to spend a week, from whence he rode at the expiration of that time, eighteen miles without stopping. His rheumatic pains had nearly left him, and the sores on his face were healed. In short the cessation of the disease was as striking and as rapid as in almost any case that I had seen, but he was not restored to perfect health. Though comparatively muscular and strong, he did not acquire that strength which he had possessed prior to the occurrence of the disease, nor did he look healthy. He continued in town taking the same medicine a fortnight longer, during which time he committed, in consequence of the liberty he had acquired, some little irregularities, such as sitting

up late, and eating and drinking too much. The effect of this alterative course of mercury, which did not produce any evident mercurial action in the constitution, and under which the patient acquired a surprising degree of strength and apparent health, fully equalled and even surpassed my expectation. Inferring the probability of a relapse, and that half the dose of the medicine was not likely to be in any degree prejudicial to the constitution, I recommended him to return into the country, and to continue the same medicines, taking the mercurial pill every second night only. The patient, however, did not prosecute the plan laid down, and his health has continued greatly disordered ever since this period. He has been subject to various local diseases ; but their nature was such, that I believe no unprejudiced person could consider them as syphilitic. He has had severe rheumatism, but it never produced a local attack on a bone, so as to resemble a syphilitic node. He has had gout, to which he had formerly been subject.

He had a great degree of inflammation and induration of both his legs. He had violent pain about the first joint of the great toe, and matter seemed to have formed beneath the periosteum, for, upon the abscess breaking, the bone was denuded. He has a redness, thickening, and tendency to ulceration, of the integuments of the *alæ nasi*.

The patient had formerly lived very freely, and the alteration in his ordinary modes of life, with the effect of mercury on his constitution when employed freely, at first, for the cure of the primary sore, seem conjointly to have produced this deplorable derangement of his constitution.

Under these circumstances, he sometimes took the compound calomel pill in the dose of one grain of calomel each night, and it generally appeared to be of service to him. Sometimes he took no mercury. His local diseases did not seem to be much affected either by the use of mercury in this degree, or by its discontinuance.

When once, without my knowledge, he took the compound calomel pill more freely, it evidently was injurious both to his health in general, and to his local diseases.

CASE XIX.

A gentleman had a sore between the prepuce and corona glandis, which was treated as a syphilitic chancre. After a time it began to spread in the cellular substance, between the integuments and body of the penis towards the pubes. In proportion as the sore became worse, the quantity of the mercury administered for its cure was increased; so that he had gone through a very considerable course of mercury, which had made his mouth very sore, and had greatly impaired his strength. The sore, however, was not amended, but when I first saw him was extending itself still nearer to the pubes, and more round the penis. I directed him to clean away the discharge by frequently injecting a warm decoction of poppy heads, and to keep a bread and water poultice round the penis. After some time the skin of the dorsum penis ulcerated, and gave an outlet to the discharge in this direction. The degree of disease which took place seemed to have been prejudicial to the front of the prepuce, for it became very œdematous, and the ulceration spread rapidly forwards so as to divide it, leaving the glans and body of the penis projecting above the separated and tumid sides of the prepuce. The sore gradually got well without any other medical treatment than what appeared necessary to regulate the actions of the bowels. He took indeed occasionally some decoction of sarsaparilla and some nitric acid. The patient had no subsequent constitutional disease.

Respecting these sores, which I have called burrowing sores, I may observe, that only a few of them begin to burrow in the first instance. It is generally an after process, and may be considered in the greater number of cases as the effect of a new action taking place in the sore. It is, however, so discordant to the progress of true syphilis, that I cannot believe it to be an effect of that disease. If we have any doubt we must look to the constitutional symptoms which succeed to them, and these we find to partake more

of the nature of pseudo-syphilis than of true syphilis. Some burrowing sores do not so affect the constitution as to produce secondary diseases, whilst others do. I have recorded a specimen of each, and think it unnecessary to cite more; though I could bring forward a considerable number. The secondary symptoms in the first case were very obstinate, and those surgeons, who were inclined to believe all these diseases syphilitic, may probably think the symptoms in this instance were so. To me, however, it appears that the most potent mercurial course was inadequate to the cure of the primary symptoms, and would have been so to those of a secondary nature, while the latter were readily controllable by an alterative course, and in some instances got well spontaneously. It is also my opinion, that their continuance depended much upon the disordered state of the constitution produced by former irregularities of living, by the irritation of disease, and the debilitating effects of the too free use of mercury for the cure of the primary sore. I could produce many instances in which the secondary symptoms were more slight and more clearly pseudo-syphilitic, than in the one which has been related. The present case I brought forward because it made a stronger impression on my mind, than those which were less vexatious, and because I do not wish to represent the subject of the secondary diseases in pseudo-syphilis as less obstinate and severe than they will often be found to be.

CASE XX.

On sloughing Sores.

A gentleman, about thirty years of age, applied to me on account of a sloughing sore about the size of a shilling on the dorsum penis. I desired him to dress it with a watery solution of opium, covered with spermaceti cerate, spread on linen, and to surround the penis with linen kept constantly wet with water. His bowels were obstinately costive, his

tongue much furred, and he had so much fever and head-ach, that the use of mercury seemed to be prohibited by the disordered state of his constitution. The sore spread so as nearly to encircle the penis, and to occupy its whole length. Various dressings were employed until the surface of the sore was no longer sloughy, but the edges were thickened and very fretful. These were touched every day with argent. nitrat. which seemed to counteract their fretful state: they afterward became healthy, and the sore healed in the space of two months from its commencement. Before the sore healed, symptoms of constitutional disorder appeared. The throat became sore, but did not ulcerate in any material degree. Spots came out on the skin and breast. He had afterward a rheumatic affection of the knee and foot. All these symptoms disappeared successively without the use of mercury, to which medicine he had so strong an aversion, that it would have been difficult to persuade him to take it: he soon recovered from the effect of his disorder, and felt as well as before he had contracted it. The medicines which were taken in this case, were sarsaparilla, nitric acid, bark, and aperients. Secondary symptoms do not succeed to every sloughing sore, and these symptoms occasionally approach more to the nature of syphilis than in the preceding case; yet I have known no instance in which, either from the irregularity of the progress of the symptoms, and their insusceptibility of cure by the powerful action of mercury, they could not be distinctly recognised as pseudo-syphilitic.

CASE XXI.

A gentleman had a sloughing sore, which spread round the prepuce, without extending backwards to the integuments covering the body of the penis, yet its breadth was so considerable as to involve the whole of the prepuce, which it eventually destroyed. The surgeon who first saw the patient had given him mercury, but, doubting the propriety of its continuance, I was consulted, and immediately opposed

its further use. Fumigations with cinnabar were found to be more efficacious than any other applications which were tried to this sore; these quickly arrested the sloughing process, but an ulcerative one continued till the prepuce was eaten away. After two months from the commencement of the sore, when it was nearly healed, the constitution of the patient became much disturbed, and secondary symptoms appeared. These were spots and blotches of rather a livid aspect, the latter of which in many parts of the body spread out into extensive sores which had a sloughing appearance. One on the outside of one foot and ankle was as large as the palm of the hand. The original sore was also irritated by the disturbance of the constitution, and began to ulcerate again very rapidly, insomuch that the glans penis, and a considerable part of the corpora cavernosa, were destroyed. Neither fumigations nor any other of a great variety of applications appeared to retard the destructive progress of this sore, and mercury was employed. The patient was ordered to rub in two drachms, by measure, of mercurial ointment every night for five weeks, when his gums became tender and swollen, and his constitution considerably influenced by the mercury, yet no material alteration took place in the disease. The unavailing effect of mercury being proved, the patient went into the country where all these complaints gradually disappeared. His health, however, was still disordered, and new symptoms came on. His nose became slightly affected, and he had pains in his bones. He now removed to the sea-side, and after continuing there for a considerable time, he wrote to me, saying, that ulceration had taken place in his nose, which had destroyed the septum narium, and that the integuments, covering a kind of node on one shin, had formed into a foul and fretful sore. I now recommended an alterative mercurial course. He took five grains of pil. hydrarg. at night, and a pint of the decoct. sarsæ daily; and in the course of four or five weeks he was apparently well, having acquired health and strength at the same time. In a second letter he ex-

pressed his great surprise at his amendment, and wished for my further directions. I then desired he would take the pil. hydrarg. every second night, if the state of the biliary secretion required it; but as that was not the case he took no more of that medicine, and has since remained perfectly well.

CASE XXII.

A gentleman had a very irritable sore on the prepuce, just behind the corona glandis, which was covered with slough: this having been thrown off was succeeded by another slough, and the sore spread laterally to the right and left; but it neither extended backwards so as to affect the skin covering the body of the penis, nor forwards so as to touch the glans; neither did it eat deeply into the part so as to affect the corpus cavernosum. I tried various dressings, but none seemed to do much good. I touched the surface of the sore with argentum nitratum, but that did harm. I therefore was obliged to sooth this sore, since I could not correct it. A salve made of spermaceti cerate, with as much aq. litharg. acet. and tinct. opii as could be incorporated with it, seemed to answer best; and the parts were kept cool by enveloping them in linen moistened with the decoction of poppies. The most perfect quietude was enjoined, and the part laid upon a pillow with the extremity rather raised above a horizontal line. I had given the patient some pilulæ hydrargyri in the first instance, but his constitution was so deranged by the irritation of the sore that it would have been absurd to persevere in the use of mercury. The sore continued to slough, and to extend in a circular direction nearly all round the prepuce, the lower part of which became extremely swollen. This took up nearly two months: about five weeks after the commencement of the disease, a spot appeared more than an inch from the corner of the mouth. It was soon covered over with a scab, which rose far above the surface. It had increased to the size of a sixpence, when I thought right to dress it, that I might distinguish the sur-

face of the sore. I found that the ulcer was very deep, but I could not see the surface for a very viscid discharge, which adhered to it like mucus. Poultices and various dressings were employed, but the appearance of the sore was unchanged, and it gradually became of the size of a shilling. At length a kind of fungus shot from that edge of the sore farthest from the mouth. A similar spot had made its appearance on the ear, and was also increasing. The activity in the disease of the prepuce had gradually declined, and I began again to try some medicated application:—the sore seemed much benefited by touching it daily with *argentum nitratum*; but when this was omitted the sloughy appearance of the sore again took place, and it increased in dimensions. It was now agreed at a consultation that this patient should use mercury, and he rubbed in two drachms, by measure, every night for six weeks. As the mercury took effect, it seemed to operate beneficially on the spot on the ear, which gradually died away; and on the sore of the penis, which also gradually acquired a healthy appearance, and the parts became sound, except at one part where the prepuce was not quite destroyed, and which still retained an unhealthy appearance. The mercury, however, did not affect the sore on the cheek; the fungus which I mentioned seemed to increase, and, after a time, skin formed over it, so that the sore healed in an unhealthy manner at the edge farthest from the mouth. But it still spread in the other direction till it reached the angle of the mouth, and it afterward extended itself along each lip. On the upper lip it had spread to the extent of one-third of an inch, and still retained the same diseased appearance which characterized it at the beginning. It was deep, and its surface could not well be seen on account of a viscid matter which adhered to it. It was now agreed in consultation to leave off mercury, lest the irritated state of the mouth should increase the destruction which the ulcer was committing on the lips. The sore now no longer spread; it very slowly lost its diseased state, and healed. This also happened in the remaining diseased part of the sore on the prepuce.

CASE XXIII.

Of Sores which become indurated in their Circumference.

A medical man contracted a sore on the prepuce, which, while it was healing, became indurated in its circumference, and when healed, it became soft and apparently healthy in the middle. The patient had taken and rubbed in mercury from the commencement of the complaint ; in short, he treated it strictly as syphilitic. When it assumed the appearance and character which I have described, he showed it to me. I advised him to continue the mercury, in such small quantity as not to affect his health, until the induration subsided, lest from want of this precaution it should fret into a sore. Under this plan of treatment, however, constitutional symptoms occurred. The throat became ulcerated, and numerous small spots came out all over the body. His health was also much disordered, and he could only take such small quantities of mercury as could have no influence on true syphilis. He took at the same time the decoct. sarsæ. All the symptoms gradually disappeared, and he got perfectly well in the course of a few months.

CASE XXIV.

A gentleman who had just left London on a visit to some friends in the country, perceived a sore on the prepuce, which he undertook to manage for himself. He dressed it simply, and took from ten to fifteen grains of the pil. hydrarg. daily. After a month he came to town with the sore much enlarged, having diseased indurated edges, but with a healthy surface. As his mouth was affected, I desired him to continue the mercury in less quantity, so as not materially to disturb his constitution. The sore healed under this treatment, in the course of another month, but it exhibited the appearances which characterize those ulcers of which I am now

speaking. It was soft in the middle, but had a circular hard rim, of the extent of a shilling. At this time his health was much disordered, and his throat ulcerated. Deep and foul ulcers also took place in his cheeks opposite to the grinding teeth, and some sores appeared on his tongue. His gums were spongy, and loosened from his teeth, like those of a person having scurvy. I now recommended him entirely to discontinue the mercury, and to take the nitric acid, which he did, in the dose of from 60 to 90 drops daily. Under this treatment, both the constitutional symptoms, and the remaining induration of the primary sore got well in the course of six weeks. Nearly a year afterward he had a severe and intractable ophthalmy, attended with nervous symptoms, and disorder of his constitution. After a time, spots again appeared on his skin, and he then applied again to me. By taking decoction of sarsaparilla daily, and five grains of pil. hydrarg. every second night, at the same time paying attention to keeping his bowels regular, his health was restored, and all these complaints totally disappeared in about five weeks.

These circumstances occurred in the spring of the year, and in the autumn the pituitary membrane of his nose began to ulcerate, and it continued to do so more or less during the whole winter, and even some discharge continued for the space of a year. The ulceration destroyed a great part of the cartilaginous part of the septum narium, so that the alæ nasi being less supported, sunk a little, and made the termination of the bones apparent beneath the skin. The deformity was, however, too trivial to attract the notice of an indifferent or inattentive spectator. For this disease the alterative plan of treatment which had been so successful on the former occasion was again instituted, though with little advantage. At first when the patient's apprehensions were considerable, as the alterative course of mercury failed to do good, the dose was increased even so as to affect the mouth, but the disease was so evidently aggravated by it, that the medicine was for a time left off, and with manifest advan-

tage. In the autumn of the succeeding year a new disease occurred. A large deep ulcer formed in the throat, which had all the characters of syphilis. It, however, very suddenly acquired its largest dimensions, being about an inch in length and half an inch in breadth. It was situated obliquely between the top of the tonsil and the front of the velum palati. It was very deep. As so little success had attended the alterative course of mercury in the ulcerative disease of the nose, and as the progress of the present ulcer could be noted, no mercury was employed, and in about a month this ulcer was well, and the patient has not since had any relapse; and, from the length of time which has since elapsed, it is highly probable that he never will have any.

I have already said, that sores which indurate in their circumference do not in every instance produce constitutional symptoms. Apprized of their nature, I generally order for the patient that dose of mercury which may be taken without affecting the constitution, as a discutient of the hardness, and I have known nearly six months elapse before it has been completely dispersed. This kind of partial induration is so different from the progress of true syphilis, that I think it must be readily granted not to be of that nature. It must however be also remembered, that sores which indurate in all parts are not always syphilitic. As I have already related two instances, I think it unnecessary to add more.

Having thus endeavoured to represent the constitutional effects resulting from sores, which differ materially in their characters and progress from syphilitic chancres, I wish to subjoin another case, though I am doubtful whether the disease originated from infection, or was the product of constitutional disorder. I think it deserves to be recorded on account of its duration.

In the year 1793, a gentleman aged twenty-six, who had been married two years, had a paralytic affection of the whole of the left side, from which he gradually but not completely recovered in about nine months, the latter of which he spent in the country, and he attributed much benefit to

the country air. About four months from the commencement of the paralysis, he had an indolent enlargement of the testis as big as a large fist, which did not subside, but in 1796 supplicated, broke, and very slowly got well. In 1797, he had an ulcerated sore throat, for which he went through a very regular and severe course of mercury. He was confined from July to November, and the mouth was in a greater or less degree affected during the greater part of that time. The throat soon got well. The year 1798 he spent in the country, and regained his health and strength in a very considerable degree. In 1802, a node appeared about the middle of the right shin, which was removed by a blister kept open for some time. He had at the same time a pimple on the nose which formed a scabby ulcer, but slowly got well from the application of a solution of the hydrarg. muriat. He had subsequently several eruptions, forming scabs upon the trunk of the body and arms which did not ulcerate, and got well without medicine. In 1804, there was a thickening about the os calcis and tendo achillis, which threatened to suppurate. In 1805, I first saw the patient; his tongue was furred, the secretion of bile irregular, with a great degree of nervous irritation. He was also subject to rheumatic pains which particularly affected his knee. I recommended a strict attention to the state of the bowels, and soothing applications, with pressure to the heel. Under this treatment, the heel gradually got well, and the spots disappeared. In the spring of 1806 some nodes appeared on different parts of the skull, when I told the patient to prosecute the same plan of treatment, and if they got better to disregard them, but if worse, to let me see them. In the autumn of this year, he called upon me with the nodes on his head considerably augmented; one on the right side of the forehead was as big as a large walnut, and threatening to break, and two on the left parietal bone, but of less size, had broken and healed. There was also a very considerable node near the top of the left tibia, which had been opened by caustic, and had left a foul ulcer. I then recommended the decoct. sarsæ with a

compound calomel pill, night and morning. 'This plan was continued from November to the end of May, when the decoction was left off, though the pill was continued in a smaller dose for some time longer. Under this course, which never produced the slightest mercurial effect on the constitution, all these complaints got well, and the patient became healthy and fat, and, as he says, better than he has been from the commencement of his disorders, which is fourteen years ago.

This case appears to me to be very similar to that related at page 227. In neither do I believe that the symptoms were the effects of poison imbibed, but, on the contrary, of a disordered state of health.

While I was attending this patient, his wife's throat ulcerated to a considerable degree. Both tonsils were ulcerated, and the ulcer continued from one along the edge of the velum palati to the extremity of the uvula. The ulcers were hollowed, covered by viscid matter, and surrounded by inflammation. I should without hesitation have pronounced these sores syphilitic had they succeeded to a chancre. Another surgeon had no doubt of their nature. The patient's bowels were disordered, and she felt generally unwell. I directed her to take some decoction of sarsaparilla, and small doses of rhubarb, whilst I attentively watched the progress of the ulcer. In the course of a week it was so decidedly amended that I had no doubt of its not being syphilitic. Where it ran down the side of the uvula, it had granulated, and was in a great measure healed. As the discharges from the bowels were blackish, I directed five grains of the pilul. hydrarg. to be taken every night for a fortnight, which gradually corrected the biliary secretion, and in that time the ulcers were perfectly healed. The patient took the pills every second night for another fortnight, when the bowels being in all respects right, and the constitution in general relieved from all disorder, they were discontinued.

About six months afterward, this patient being in the country, thought she had caught a cold in her head, as she had

frequent occasion to blow her nose, and as she snuffled in speaking: this complaint gradually increased; and after a fortnight had elapsed, she perceived a difficulty of deglutition, which alarmed her, because it reminded her of her former indisposition. She was at this time also very unwell, and felt in the same manner as when her throat had ulcerated. These symptoms gradually increasing, after another fortnight she came to town. There was no doubt but in this second attack ulceration had taken place in the upper surface of the velum palati, for the ulcer had eaten through the soft palate at a small distance from the termination of the bone, there presenting a circular aperture, about as large in circumference as a pea. This complaint was made perfectly well in three weeks, by the same treatment as was instituted in the former. The health in general, and the digestive organs particularly, were disordered in the second attack as they were in the former one, and both were set right by the measures that were pursued.

I have known many ulcerated throats, which could not, by inspection, be distinguished from syphilitic diseases, and which were even supposed to be so on account of the difficulty of curing them, arise from an irritable state of the stomach, and they have readily got well by the treatment above described.

The foregoing case might have been one of this description. Might it not, however, have arisen from contagion, and have been caught from her husband? I have recorded it chiefly on this account; for I am desirous of mentioning, that I have seen several instances of pseudo-syphilitic diseases communicated from husbands to wives, where there were no sores, nor apparently any morbid discharges from the genitals. If this supposition be true, it would probably be considered as a very curious fact, and I mention it to excite general observation, by which alone it can be confirmed or confuted. I shall briefly relate another case, suggesting the same opinion.

A gentleman had been my patient on account of a chancre, for which he regularly took mercury so as slightly to affect his mouth. He had afterward an ulcerated throat, which got well without the use of any medicine. Shortly afterward he married a very healthy woman, who in about three months became very unwell, and had pseudo-syphilitic diseases, for which a mercurial course was instituted without benefit. As I had attended the husband, I was once consulted on her case. She had then a deep and foul ulcer between the ala nasi and upper lip. Her diseases afterward got slowly well under a plan of treatment calculated to restore her general health.

I am aware that the cases which I have related by no means represent all that deserves to be displayed, in order to convey to the reader that extensive knowledge of the subject which a surgeon living in this metropolis may and ought to possess.

For example, I have not related any case to show that the primary sores, in many instances, are subject to paroxysms of disorder; that they will amend and seem inclined to heal, and when, from their appearance, the greatest hopes are entertained, on a sudden, a renovation of disorder takes place, and more parts become diseased or destroyed. This circumstance happens whether mercury be employed or not, and under an equal operation of mercury on the patient's constitution. Also in syphilitic and pseudo-syphilitic affections, sometimes diseases occur which are the effect of derangement of the constitution at large, such as unhealthy abscesses and sores; and while mercury, if employed, acts beneficially on the symptoms for which it was administered, it often has a prejudicial effect on these accessory diseases.

I have now lying before me the written records of many cases similar to the foregoing, each of which exhibits some interesting variety observable in these diseases. I forbear, however, to adduce more instances, from a conviction that recorded cases will never make a forcible impression on the

minds of practitioners, and that they merely serve to induce attention to the occurrences which are met with in practice, so as to lead each person, by observing circumstances to which he had perhaps before been too little attentive, to acquire practical information and knowledge from his own experience.

SECTION V.

On the Treatment of Pseudo-Syphilitic Diseases.

THE impropriety of putting patients under a full mercurial course, such as is necessary for the cure of syphilis, without taking into consideration the nature of the primary sore, or watching, even for a short time, the progress of the constitutional symptoms, must, I think, be to every one sufficiently evident. If the constitutional symptoms proceed in the manner detailed in the second section, and get well spontaneously, it would be absurd to use mercury; but if they are progressive, and threaten to destroy parts of importance, even though we may have great reason to believe that they are not truly syphilitic, an alterative course of mercury, with the addition of decoction of sarsaparilla, seems to be, in general, the most efficacious means of effecting a temporary cure.

In the second section, I stated, that after having waited till I was assured that the constitutional symptoms were not truly syphilitic, and, consequently, did not require for their cure a strong mercurial course, I generally gave the compound calomel pill with a view to shorten the duration of those symptoms. This practice has been said to be ridiculous. I only wish to show that, in general, it is the most successful that can be pursued. The cases which have been related attest, that an alterative course of mercury will cure diseases which a potent one will aggravate; and that neither course can be considered only as producing the temporary effect of curing the present symptoms without eradicating the constitutional disease. In proof of this point, I could adduce the most abundant and clearest evidence. I take the liberty to mention, that some eminent surgeons of this metropolis, who concur with me in opinion respecting the nature of these diseases, are averse to employing mercury for their cure;

and as such sentiments and practice may become very general among those who clearly perceive that the most powerful mercurial courses will not radically cure these diseases, and that they will get well without that medicine, I feel it necessary to discuss the subject a little more at large.

I have found a compound calomel pill, or five grains of the *pilul. hydrarg.* taken every second night, sufficient in many cases to heal sores more rapidly than I wished, while in others, the same pill taken every night has been insufficient, and the disease has been controlled and cured when the pill was taken night and morning. The dose which has been most successful has been one that has not perceptibly affected the mouth nor weakened the constitution; during its use, on the contrary, patients have acquired muscular strength and increase of bulk.

The constitutional symptoms in these cases frequently occur when the patient's health is much disordered; and it may be feared that any course of mercury, however trivial, may increase the weakness and irritability of the constitution. However, it will be found, on the contrary, that an alterative course of mercury, by controlling the disease, will produce a diminution of irritability, and increase the strength of the patient. All persons who are not familiarly acquainted with the fact are extremely surprised at the wonderful acquisition of bodily strength and vigour obtained by the patient during the use of a medicine which they have always considered as likely to debilitate. The difficulty is to ascertain the precise dose that shall cure the local diseases, without apparently producing any mercurial effect on the constitution in general. This dose must necessarily be various, as the susceptibility of being acted on by mercury varies greatly in different persons.

Respecting doubtful cases, and of this description must many be, which are presented to the notice of a surgeon who has had no opportunity of observing the characters of the primary sore, &c., I wish to ask the following question. If a disease that may be suspected to be syphilitic gets well, when the patient takes only five grains of the *pilul. hydrarg.*

each night, (taking also the decoction of sarsaparilla in the day,) without the mercury apparently disturbing his constitution, but, on the contrary, contributing to the increase of his strength, ought such a disease to be regarded as syphilitic, and requiring a persevering course of mercury for its cure? Were I to answer this question agreeably to the dictates of my own experience, I should reply in the negative, because I have seen many such instances, wherein it was evident that the disease was of the kind which I have termed pseudo-syphilitic. Within these few months three cases have come under my observation, in which the throat was deeply and very badly ulcerated, and the general health greatly impaired; and yet all the patients got well in about a month by such a course of medicine as I have described, increasing in health as the local disease amended, and without any mercurial effect on their constitution being manifest.

This is a point of practical conduct, much deserving of consideration, and requiring to be established. It would appear wrong to use more force for effecting a purpose than is requisite. In syphilis the cure of the diseases for which mercury is administered is a proof of the sufficiency of the mercurial course. Syphilitic symptoms will not, however, as far as my experience enables me to determine, give way to so trivial a quantity of mercury. Therefore the mode of cure of these diseases may serve as a test of their nature, and as a guide for our conduct on a recurrence of symptoms, in cases where no other evidence can be obtained.

Were this question determined, were it decided, that truly syphilitic symptoms would not yield to an alterative course of mercury, which produced no apparently mercurial effect on the patient's constitution, but under which it acquired a natural degree both of tranquillity and strength, another inquiry would yet remain. Are we warranted in continuing or augmenting the mercurial course, in order to prevent a return of the same or similar symptoms? Were my own experience to direct me in my reply to this question also, I should again answer in the negative; because I have frequently, in such

dubious cases, put patients under a full mercurial course, in order to prove, that if any relapse should occur, the disease could not be syphilitic, or curable by such a course of mercury. The cases to which I allude were those of officers and persons of strong constitutions, in which it seemed necessary to establish this fact, with a view to the subsequent treatment of any symptoms that might occur. Yet in these cases new symptoms were manifested. I have also been frequently consulted with respect to the degree to which a mercurial course should be carried, and the time it should be continued, that had been instituted for the cure of pseudo-syphilitic symptoms, which had been mistaken for those of true syphilis; and I have recommended that it should be continued, to that degree and for that duration, that should render a repetition of it unnecessary, by proving it to be unavailing, should a recurrence of symptoms ensue. Yet in these cases also, either the same symptoms returned or similar diseases took place, and in most instances these returning symptoms have got well without the use of mercury. The cases also, which I have detailed, show how unavailing the most potent courses of mercury are, in effecting the radical cure of these disorders. It seems therefore better to desist from the use of medicine, when the local diseases are well; and should they recur, to cure them again by an alterative course of mercury, which appears, from its effects, to be not only innocent, but even salutary. In some cases which I have attended, after having cured the local symptoms by an alterative course of mercury, with the addition of the decoction of sarsaparilla, without producing the slightest apparent mercurial effect on the patient's constitution, I have recommended the continuance of half this innocent quantity of mercury for a considerable time, in order to prevent a relapse, and in many instances this plan of treatment has seemed to succeed, whilst in others it has failed.

In some cases of pseudo-syphilis, one set of symptoms will disappear without the use of mercury, yet new symptoms occurring, they will be progressive and destructive so

as to require mercury for their cure. The reverse of this also happens : one set of symptoms seemed to require, and to have been cured by an alterative course of mercury ; yet others subsequently arising, may disappear without its administration. Even an innocent and alterative course of mercury should not, in my opinion, be hastily resorted to. The object which we are to keep in view, throughout the whole treatment of the disease, is to tranquillize and invigorate the constitution, and only to check or cure destructive or very distressing symptoms by an adequate quantity of mercury. Though an alterative course of mercury is so generally beneficial, yet in some instances it aggravates these diseases. There are persons of so peculiar a constitution, that the smallest doses of mercury cannot be given without producing irritation and disorder. Mercury also may fail to be beneficial, when administered at one period of these diseases, and yet have the most desirable effect at another. It may, for instance, fail to do good at an early period of the disease, when it is in a state of considerable activity, and yet may counteract and subdue it, when its vigour is on the decline. The cases furnish examples of these facts.

Though in general the decoction of sarsaparilla appears to be the best medicine that can be given in addition to alterative doses of mercury, yet, when the constitution of the patient is weak, it is useful to give medicines of a tonic and cordial kind. This practice is peculiarly proper, when it requires a more powerful operation of mercury than I have in general described, to control and cure urgent symptoms.*

* It may be thought by some, that I have relied too much, in the treatment of the foregoing diseases, upon the internal administration of mercury, and have not sufficiently tried its effects by inunction. I therefore think it right to explain, that it seems to me immaterial, whether a mild oxyde of mercury, such as should be contained in mercurial ointment, and quicksilver pills, is absorbed from the skin or the alimentary canal. I generally find that as much of the quicksilver pill can be taken internally as is necessary to produce the degree of mercurial affection of the system, which is requisite for the cure of pseudo-syphilitic symptoms, without in the least disordering the functions of the di-

Such is the result of the observations I have made on the treatment of these most vexatious diseases ;—diseases which must, I believe, perplex all surgeons, whatever opinions they may entertain respecting them, and whatever conduct they may pursue with a view to their cure. They, who believe them all to be syphilitic, and regard mercury as the only remedy, must be perplexed by discerning its inefficacy. They who abstain from it must be perplexed by observing the pertinacious nature of the disease, and the frequent recurrence of new and distressing symptoms. They who steer a middle course, as I have done, will not avoid difficulties. Without any particular investigation of the nature of venereal diseases, two different modes of treatment seem to have been adopted by the profession. One party has used mercury liberally for evident reasons. It seemed necessary for the cure of syphilis, and it has been successful in cases of that disease. Believing all venereal diseases to be of that nature, and further incited by frequent recurrence of symptoms, one party of professional men has used mercury, as I believe, in a most injurious degree ; whilst others, from witnessing the beneficial effects of an alterative course of mercury in pseudo-syphilitic diseases, have considered such a course to be all that was necessary in every instance.

No improvement in practice could possibly take place, whilst former opinions prevailed ; whilst surgeons regarded every constitutional disease that had the appearance of syphilis to be really of that nature, and treated it accordingly. This was done, whatever might have been the characters and progress of the primary sore from which it originated ; and even when it was preceded by no sore, it was considered as an instance of syphilis long lurking in the constitution. Even

gestive organs ; but, on the contrary, with evident benefit by exciting and maintaining the natural and healthy actions of those organs.

It is right, however, to add, that the pilul. hydrarg. which I have always employed, has been procured from the Apothecaries' Hall ; and that when it has been obtained from other places, its effects have by no means corresponded to what I have represented of them.

Mr. Hunter, who so accurately observed diseases, and so clearly distinguished, that there were many diseases resembling syphilis which were not of that nature, must have been exceedingly perplexed in his opinions and practice. As he believed chaneres might be modified by the diseased propensities of the constitution, when he met with uleers in the throat, eruptions, and nodes consequent to such chancres, which, not even his accurate observation could, I will venture to affirm, in many cases, distinguish from those of syphilis, he must, I think, have deemed it right to treat them as if they were syphilitic. The cases to which I now allude are recorded in the second section.

But in these cases, the symptoms will recur in general after the severest course of mercury. That he met with such cases, and was perplexed by them, may be inferred from his opinions, he having accounted for such failures by saying, that mercury will cure the disease when in an active state, but will not cure the disposition to diseased actions, which certain parts may have assumed. I believe, however, it will be found that mercury cures both the actions and dispositions to act in true syphilis, and that the perplexing cases were of a different nature to that disease. How far the diseased actions incited by syphilitic poison admit of considerable modifications from peculiarity of constitution in the primary sores or chaneres, we have, I believe, yet to learn. There are, however, good reasons for supposing that when a poison is absorbed without inducing a sore, and when that sore is of a nature very discordant to those of syphilis, that the constitutional symptoms will be found equally to differ from those of syphilis in their nature, and require a different mode of treatment.

Having been instructed by Mr. Hunter to believe, that there were diseases resembling the venereal disease, which were different in their origin and progress, having perceived nothing to contradict, but, on the contrary, every thing to confirm that proposition, I have in this publication avowed my opinion of their existence to a far greater extent than Mr.

Hunter supposed. Knowing how much opinions influence our judgment and conduct respecting facts which come under our observation, I have even wished that these opinions, if they be correct, might become general and confirmed. Being conscious that they have not been hastily adopted; and that in surveying the facts upon which they are founded, I have endeavoured to keep my mind as unprejudiced as possible, I should think myself guilty of a culpable timidity, were I not to avow them. If the opinions be correct, it must indeed be acknowledged, that cases of true syphilis are much less frequent now than formerly, and for this I have endeavoured to assign a reason in the second section. Well aware how liable an individual is to err, in forming general conclusions from his own limited experience, and conscious that the opinions which I entertained respecting these diseases were different from those of a great number of eminent surgeons, I at first published my observations on the subject in portions; and the same apprehension as to the possibility of error has now induced me to republish them in a less methodical manner than I could have wished. I thought this mode would show better the rise and progress of those opinions which I cannot but entertain; inasmuch, as they appear legitimately to be deduced from facts. Had I published all I knew and thought relative to these subjects under another title; had I called the book *Additional Observations on Venereal Diseases*, or on progressive and remittent syphilis, it might have been better received, because it might have been more accordant to the notions of others. Yet in whatever way I might have represented the subject, the difference would only have been in the manner of displaying it; there would have been none in the matter to which it related, as that consists of actual occurrences in practice.

ON DISEASES OF THE URETHRA.



On Diseases of the Urethra ; particularly of that Part which is surrounded by the Prostate Gland.

SECTION I.

EVERY surgeon will, I believe, acknowledge, that an obscurity hangs over the subject of strictures of the urethra, which prevents us from perceiving the cause of many circumstances which occur in daily practice. Contractions of this canal are sometimes readily enlarged to their natural diameter by the introduction of common bougies, and the cure thus effected is permanent. In other cases it is difficult to procure even a temporary enlargement of the contracted part; and the stricture returns, when the means by which it was relieved are discontinued. This variety in the event of different cases may in some instances, depend on the kind and duration of the disease in the strictures themselves; yet, in many others, I am convinced that it is owing to other circumstances, which it is my design to consider in the present paper. Before my observation had been directed to these circumstances, I was much puzzled to account for the discordance in the result of cases apparently similar. I was equally unable to understand some occurrences, like those which are represented in the following case.

CASE I.

A gentleman whose life was made uncomfortable by a very frequent and very urgent propensity to void his urine, applied to me for advice. Two strictures were discovered in the further part of the urethra, which did not oppose the passage of a bougie as large as a goose quill. Some difficulty was experienced when the bougie entered that part of the urethra which passes through the prostate gland; and the patient complained of pain, which was considerably increased at the orifice of the bladder. The instrument, however, entered the bladder, though with difficulty; and it seemed to be grasped by the sphincter. The prostate was enlarged to twice its natural size; which circumstance seemed to me to explain the cause of the slight impediment which occurred to the passage of the instrument through it. The urethra was unusually long in this patient; and though bougies had been frequently introduced, I suspect that they had never been passed into the bladder. The patient was of this opinion, from the peculiar sensations which he experienced, and which he had never felt before. He called upon me four days afterward, said that he was much relieved, and requested to have the operation repeated. The same bougie which had been used before now passed with much greater facility. The patient still felt peculiar sensations, though much diminished in degree, as the instrument went through the prostate. It entered the bladder without difficulty and without appearing to be grasped. I now introduced a larger bougie, which went through the strictures with less difficulty than the smaller one had done on its first introduction. This produced the same uneasy sensation on entering the prostate; it was retarded for a moment at the orifice of the bladder, and was slightly grasped at its entrance. All the symptoms were still more relieved by this second introduction. The same operation was repeated a few times; at first every fourth day, and afterward once a week, till a bougie of the

largest size could be passed without occasioning any uneasiness. The patient, during the latter part of the time, did not require to void his urine more frequently than is common. He was relieved from a great trouble; and though many years have elapsed, he has not experienced similar inconvenience.

Such cases as the preceding induced me to suspect that a stricture might exist in the orifice of the bladder. The following case gave me new, and, as I think, just ideas relative to this subject. Whether the opinions be correct or not, the cases, it must be admitted, deserve attention.

CASE II.

A gentleman, more than seventy years of age, had experienced for about six years a difficulty in voiding his urine, which gradually increased, till the stream became very small. This was attended with a frequent propensity to discharge the urine, which disturbed him every second or third hour during the night. At last a complete retention took place when he was in the country; and a surgeon attempted to introduce a small catheter, which however was prevented, by a stricture, from passing farther than six inches. The patient immediately came to London, when I directed him to take some castor oil, and to bathe the perinæum and adjacent parts frequently with warm water. After some time the urine flowed again, and he was relieved from the present urgent symptoms. In two days I examined the urethra, and found a stricture at six inches, through which I could not pass even a very small bougie. I touched this with the argenticum nitratum; but the application did not produce any alteration in the circumstances of the disease. On the third day the bougie passed on to a stricture, at seven inches, which was also touched with caustic; and the same treatment was repeated with another stricture, at the distance of half an inch from this. The bougie now passed through all the strictures, and entered the prostate, when I was obliged

to withdraw it immediately, from a sudden attack of pain and faintness. No enlargement of the prostate was discovered by an examination per anum ; nor was it tender when compressed. I told the patient that I considered it very desirable to introduce a tubular instrument into the bladder, but that the minuteness of the stream of urine rendered it doubtful whether this could be accomplished. I requested him to call in another surgeon, that the attempt might be made by us conjointly. A flexible varnished catheter, containing a strong wire, was readily passed into the prostate, but could not be made to enter the bladder. The attempt was not long persevered in, from an apprehension of doing injury, if the instrument were not guided in the right track. No blood flowed upon withdrawing the catheter. A slight retention of urine followed this attempt ; but, after a few days, the patient was in the same state as before. On examining the urethra four days afterward, I found that the smallest bougie would not pass further than six inches ; so that the contraction of the first stricture had been re-excited by the irritation occasioned by our late attempt. As the application of the *argentum nitratum* had so suddenly and completely relieved this stricture in the first instance, I now repeated this application, although I knew that the stricture was merely spasmodic. In the course of a few days a small bougie was introduced into the prostate, and afterward a larger one. I now wished to ascertain whether I could pass the bougie into the bladder, or learn, by means of that instrument, the cause of the obstruction. As the patient found that he could void his urine most easily when lying on the left side, it seemed probable that the orifice of the urethra might be found in that direction. I therefore depressed the point of the instrument, and carried the other extremity towards the right groin, when most unexpectedly it went forwards into the bladder. When the bougie was withdrawn, a considerable quantity of clotted blood and mucus, with some matter, oozed out of the urethra ; and the patient afterward voided in a large stream about eight ounces of turbid and foetid urine mixed with mu-

cus; after which he felt as if his bladder were completely emptied. From this time he had no occasion to void his urine more frequently than is natural, and he expelled it in as large a stream, and with as much facility, as he had ever done at any period of his life. The bougie was for some time introduced every third day, and afterward once a week. It passed easily not only through the urethra, but into the bladder, when guided in the direction which has been mentioned. At first the point was soiled with blood and matter, but afterward these appearances were no longer observable, which led me to conclude that the circumference of the ulcerated orifice of the bladder had completely healed. Two years afterward this gentleman experienced a recurrence of his former complaints; a small bougie only could now be introduced into the bladder. A larger bougie was passed through the urethra on the next attempt; but was not carried forwards into the bladder, from an apprehension of irritating the prostate. After a few days the larger bougie was introduced into the bladder, and met with a little resistance at its orifice. From this time it passed with the same facility as when I discontinued my former attendance, and the patient found himself equally well. Two years have now elapsed, without any necessity for repeating these operations.

In this case a disease took place in the prostate gland, without producing any evident enlargement or tenderness of its substance, though it had proceeded to a state of ulceration. The disease seems to have operated on the continuous parts in two directions; backwards upon the bladder, rendering that organ irritable; and forwards upon the urethra, causing strictures, which were in some degree organic, though chiefly of a spasmodic nature. It must be allowed, however, that the obstruction of the aperture into the bladder by the discharges from the ulcerated surface contributed in a great degree to maintain the irritability of the organ, by impeding the discharge of the urine. This disease was also of a nature that admitted of relief, and the passage of a bougie seemed to effect its cure. It had, however, a tendency

to recur, and the use of the bougie lessened the irritability of the part, and arrested the progress of the disease.

The circumstances of this case do not indeed unfold the cause and precise nature of the disorder, which, however, will, in my opinion, be elucidated by those which follow. They induced me to suppose that those instances, which I had formerly met with, and which appeared so unintelligible, were of a similar nature; and they made me particularly attentive to the state of the urethra, where it passes through the prostate gland, as I saw the possibility of this canal being diseased, without the prostate being materially implicated in the disorder. The following case occurred soon afterward.

CASE III.

A gentleman, between fifty and sixty years of age, had for twenty years been subject to occasional fits of dysury. I was desired to see him in one of these, which had been very severe and long continued. He was obliged to void the urine at least every hour. The calls were sudden and urgent, and the pain continued for a considerable time after the urine had been discharged. He had some fever, which such irritation would naturally produce. A moderate-sized bougie stopped at two strictures, but passed through them without much difficulty: when it entered the prostate, the patient complained of burning pain; of a strong irritation to make water; and grew so faint that I had merely time, by a gentle pressure, to ascertain that the bougie would pass into the bladder: when I withdrew it, the point was covered with blood. The patient was directed to bathe the perinæum with warm water frequently, if the dysury was urgent. He was much relieved by the introduction of the bougie, and did not want afterward to void his urine oftener than every second or third hour. The calls were less urgent, and the subsequent uneasiness less in severity and duration. After two days, a bougie of the same size was introduced to the extent of eight inches, and withdrawn; no blood adhered to its

surface. A smaller bougie, much curved, was now passed into the bladder; the patient complained of the same uneasy sensation as before, when it entered the prostate; but he did not grow faint. The point was bloody for three quarters of an inch, but less so than on its first introduction. More relief was experienced this time. The urine was now voided only every fourth hour. Two days afterward the bougie was again introduced into the bladder, considerably curved, and with the point carried along the upper surface of the urethra, where it passes through the prostate gland. The point was soiled with a yellowish fluid, slightly tinged with blood. As the patient was getting much better the operation was not repeated till after four days, and then after the interval of a week; at which time the blood and the yellow fluid had entirely disappeared. The urine was not voided more frequently than natural, nor was its expulsion attended or succeeded by any painful sensation. The strictures in this case felt firm, and not easily dilatable: I thought it necessary to relieve them, lest they should contribute to re-induce the irritation in the prostate; but the patient felt himself so well, that he was averse to any thing which might renew his former sufferings, and he has had no symptoms of dysury since that period. The prostate in this patient was not enlarged nor tender. Conclusions similar to those, which were deduced from the former case, may be more fairly drawn from this; viz. that a disease may occur in the membrane of the urethra where it passes through the prostate, and that it may render the bladder irritable, and produce stricture in the urethra; for in this case there was no mechanical obstruction to the expulsion of the urine to produce irritation in the bladder. It also appears that the disease admitted of relief by the introduction of a bougie.

I have lately met with another case in a younger man, who is between twenty and thirty years of age, and who was afflicted with similar fits of dysury, the cause of which could not be ascertained. I passed a bougie for him a few times, but found no stricture in the urethra. The same painful

sensations were produced in the prostate, as in the preceding cases. The bougie did not appear at the time to relieve the dysury; but the complaint gradually ceased, and the patient left town. He has been much better since this time, and attributes his relief to the passage of the bougie.

CASE IV.

A gentleman, about sixty years of age, was affected with dysury, which increased with violence, though various means were employed during two years for his relief. He voided his urine every second hour, or oftener, with great pain and severe irritation: which continued for some time after its expulsion. He had such a sensation of heat and uneasiness in the perinæum, that he could not bear to bring his thighs together; and he was obliged to use a cushion, with a vacancy in the middle, when he sat down. He could not ride in a carriage, or even walk out, although his general health was good. A moderate-sized bougie halted a little at two strictures, and when it arrived at the prostate produced a violent burning sensation, a vehement propensity to void the urine, and extreme pain at about two inches from the orifice of the urethra; which part was always particularly painful during the time of voiding the urine, and after its expulsion. On withdrawing the bougie, which had entered the bladder, its point was found to be covered with blood. The prostate being examined, felt rather broader than usual, but was not tender. The patient was relieved by the introduction of the bougie, which was repeated on the third day: it went more freely through the strictures, and the sensations, caused by its passage through the prostate, were diminished. The point of the bougie was bloody. I ascertained that the blood came from that part of the urethra which is situated in the prostate, by introducing a large bougie to the distance of eight inches, and then withdrawing it: the point was not in the least soiled with blood. The second introduction of the bougie produced considerable relief. The urine was re-

tained longer, the uneasy sensation in the perinæum was diminished, and the patient could walk or sit down more comfortably. The bougie was used every third or fourth day for three weeks; and then once a week for a month longer, its size being gradually increased. The appearance of blood on the point gradually ceased: it was afterward soiled with a purulent and then with a mucous fluid, which appearances also gradually ceased. The water was now voided only at intervals of four hours, the subsequent pain being either trivial or entirely wanting; the uneasiness in the perinæum was so inconsiderable, that the patient could walk for several hours, and sit down without pain. The seminal discharges had been attended with extreme pain, so great as almost to produce fainting, before the state of the prostate had been relieved: they afterward took place without any unusual sensation.

These cases show that the urethra may become irritable and diseased, where it passes through the prostate gland, without any material disorder of the contiguous parts. They induced me to pay particular attention to the state of that part of the urethra; which attention will, in my opinion, be found of great consequence in directing our treatment of these disorders. As it would render this paper extremely voluminous to detail the particular cases which I have met with, I shall merely relate the observations which I have made, and the inferences which I have drawn from them; that the profession in general may investigate the subject, and determine how far these observations and opinions are correct. First, then, it has appeared to me that a state of inflammation and irritation may take place in the remote part of the urethra to a greater or less extent. It may produce in the prostate that peculiar sensibility of the part which I have described; and in the perinæum it may cause contractions of different parts of the canal. Either of these affections may be more permanent than the other, even where each part has been equally affected in the beginning. This state of inflammation and irritation is frequently produced

by gonorrhœa, though it may occur from other causes. If a bougie be introduced injudiciously, when this disorder first occurs in a gonorrhœa, numerous spasmodic strictures* are met with; the patient becomes alarmed by the difficulty of passing the instrument, and by the name of strictures, and consults a more experienced surgeon, who directs local warm bathing, and the application of leeches to the perinæum. The disorder is cured; the patient expects that strictures remain; a full-sized bougie is introduced to satisfy him, which passes without the least difficulty. I am unable to determine, whether in such cases the urethra is affected in the first instance in that part which passes through the prostate, as I never made any examination under these circumstances, though I think it very probable that it is so. When a gleet becomes unusually protracted, it is frequently owing to the effects of this disorder in the remote part of the urethra, maintaining a degree of irritation in the front. Under these circumstances, it is allowable to introduce a bougie, when strictures will frequently be found in the perinæum; and in many cases, the patients whom I have attended have experienced those sensations, which are characteristic of tenderness in the membrane of the urethra, where it passes through the prostate. If, therefore, we look to the origin of those cases, which we are called upon to attend in their advanced stages, we might expect to find the disorder of the urethra various with respect to the kind and extent of the disease. That it will be found so in practice I do not hesitate to affirm from the observations which I have already made relative to this subject. In some cases, strictures in that part of the canal, which is subject to such contractions, will be the sole disease. In others, an uneasiness, and such sensations as I have described, will be complained of as the bougie passes through the last inch of the urethra, which is contained in

* I have used the term spasmodic strictures in the indiscriminate manner in which it is generally employed, though I am aware that it is objectionable: a stricture from spasm is not a stricture: and a stricture may be irritable or spasmodical, or otherwise.

the prostate gland. In some cases also, the strictures will be the less degree of the disease, and the irritation in the prostate the greater; and in some cases it will be found that nothing is discoverable which can fairly be denominated a stricture, and yet the tenderness which I have described exists in a most painful degree.

A student of the hospital who had a slight gleet, but of long continuance, having also some pain and irritation after voiding his urine, though without any frequent desire to void it, passed a bougie, which arrived at the prostatic part of the urethra without impediment, or causing him to feel any particular uneasiness; but when it glided on through the prostate, it occasioned, he said, a burning pain and irritation, so peculiar, as not to admit of description, and so severe, that he could not have believed it, but on the evidence of his own senses.

My observations have also led me to believe, that the inflammation of the testis, which is so frequent an attendant on gonorrhœa, is excited by inflammation of this part of the urethra, and not by a sympathy between that gland and the urethra in general.

In deducing these diseases from the inflammation which gonorrhœa excites, I mean only to trace them from a very common origin. The same disorders frequently take place without having been preceded by that complaint. An attention to the circumstances, which have been mentioned, seems to me to explain the contradictory events which happen, when a similar plan of treatment is pursued for the cure of diseases of the urethra. When strictures are the sole disease, they are often readily, and generally permanently, cured. When an irritation, such as I have described, exists in the prostate, it is difficult to enlarge the contracted portions of the canal; and, when that is accomplished, the strictures recur, as a cause of irritation to the urethra still continues. In some cases, the enlargement of the strictures fails to mitigate the dysury, and in others it is augmented by the measures which have been employed to cure the stric-

tures, when the state of irritation at the neck of the bladder has been unadverted to. Many patients have applied to me under these circumstances, after having been under the care of other surgeons. They have stated, that small bougies only could be passed in the first instance, and that though the largest could now be introduced, the complaint was no better; nay, some have thought themselves materially worse. A bougie has passed in these cases eight inches, without meeting any considerable obstruction, or exciting much sensation; but, after this point, it caused a most acute and burning pain, with vehement desire to make water. Some have inquired if I was withdrawing the bougie, whilst it was slowly proceeding, and some have complained of great pain in the front of the urethra. Similar cases have occurred in my own practice. I have relieved strictures without materially benefiting my patients; of late years, I may venture to say, without making them worse; because I have been cautious not to hurt the canal, where it passes through the prostate.

Some cases of disorders of the urinary organs are made worse by the attempt to cure strictures; and I think I deliver an important admonition to the younger part of the profession, when I caution them to beware, in their attempts to cure strictures, that they do not irritate nor injure the last inch of that canal, where there are no strictures, but in which considerable disorder may nevertheless exist.

In some cases of diseased urethra, which I have not unfrequently met with, strictures are found, through which a small bougie passes with difficulty; and it produces those sensations, in passing through the prostate, which I have described, as peculiar to that part of the canal when in a diseased state. The patient, however, experiences relief from the introduction of the bougie; and if it be passed again on the third day, it will meet with no obstruction from the strictures, and cause less uneasiness in passing through the prostate. I have then taken a bougie of a larger size, such as it would have been impossible to introduce in the first instance, and

this has passed through the strictures to the distance of eight inches ; but I have forbore to carry it any further, lest I should irritate the urethra near the neck of the bladder. It appears therefore to me, that you may relieve or aggravate strictures in such cases in proportion as you diminish or augment the morbid sensibility of the remote part of the urethra ; and an attention to the state of this part is on this account of the greatest importance.

Having thus adverted to the probable origin of the disease, which I am endeavouring to describe, and its connexion with strictures, I proceed to observe, that such a state of morbid sensibility in that portion of the urethra, which passes through the prostate, may perhaps exist as a symptom of an irritable bladder. If the lining of the bladder be inflamed and irritable, it is probable that the disorder will extend into the urethra for some small distance. In the fourth case, I believe that the disease in question was complicated with an irritable state of the bladder ; but whether it was to be considered as an adjunct circumstance, or in the relation of cause or effect, cannot be determined. The irritability of the bladder was diminished, but not cured, by the treatment which lessened this disease. In one gentleman, who apparently died of an irritable bladder, and who complained of the sensations which I have described, in an acute degree, on the bougie passing through the prostate, the diseased parts were examined, but very trivial morbid appearances were discovered. The lining of the bladder was not perfectly natural, and was inflamed ; yet the diseased appearances were not striking ; and in the urethra the deviation from the healthy structure was still less observable.

It is not improbable, however, that such a morbid sensibility of the prostatic urethra may arise from an irritable bladder. Perhaps, also, it may occasionally arise from the irritation of the last stricture. Many patients with strictures, who complained much of the sensations at the neck of the bladder, at the commencement of the treatment of their complaint, have asserted, that they felt no unusual sensations

when the bougie passed through the prostate, after the strictures had been cured. Yet, though I would admit that a tenderness of the canal of the urethra in the prostate may sometimes arise from its proximity and continuity with the lining of the bladder, or with the last stricture, I think it more frequently exists as an original and independent disease. It has been shown, that it may render the bladder irritable, and excite contractions in the urethra. Some cases have been adduced, which show that this state may exist, and yet the bladder may not be constantly irritable, but that it may be affected by fits. I have also met with a case where this sensibility existed in an extreme degree, and yet it seemed to have very little influence on the bladder. I have likewise known this irritable state of the urethra complicated with enlargement of the prostate.

I proceed, in the next place, to relate what I have observed respecting the treatment of the disease, which I have been describing. The three first cases show, in a striking manner, the advantage derived from the introduction of bougies; and I have seen many similar ones, though I scarcely think so demonstrative of the utility of this mode of treatment. I know some patients with occasional attacks of dysury, and who have this tenderness of the remote part of the urethra, in whom the passage of a bougie, together with warm bathing of the perinæum and adjacent parts, very speedily relieves a disease, which had proved very tedious and distressing before these measures were adopted. If a bougie be introduced, for the first time, in a case of this description, severe pain is felt, and faintness is occasioned: if this operation be repeated three days afterward, the pain perhaps is much less severe, and it may diminish at each succeeding introduction of the instrument. Should this be found to be the case, surely nothing need be farther said in commendation of this mode of treatment. The morbid sensibility of parts is diminished by it. This happened in the three first cases in a remarkable degree, and I have known it take place in many others. Nor is there any thing in this event that should excite surprise:

every surgeon is familiar with the same circumstance, with relation to strictures in the urethra. The first introductions of a bougie are very painful; the subsequent ones become to be even disregarded. Still, however, I think it may be useful to dwell a little on this subject, and to consider the probable causes of these effects, as it may tend to establish rules for our conduct in practice. It appears to me, that we diminish the morbid as well as the natural sensibility of parts by doing them a degree of violence, short of that which produces a kind of reaction in them, by which their sensibility is heightened. This is, indeed, the consideration which guides my practice in these and in many other cases. If, even in strictures of the urethra, the sensibility of the canal becomes increased by the introduction of bougies, or, in other words, if inflammation is excited, surely it is wrong to prosecute such measures at this juncture. If the morbid sensibility be diminished, we may use more freedom in the prosecution of our measures. In passing the bougie, in the cases now under consideration, it ought at first, I think, to be so small as not at all to distend the irritable urethra. I have always curved it considerably, and kept the point in contact with the upper surface of the urethra, as it passes through the gland. I recommend warm bathing to the perinæum, with a view to obviate or diminish irritation. If I find, on the second introduction of the bougie, the sensibility of the parts diminished, it induces me afterward to proceed more freely; but at all times with a caution excited and regulated by the consideration which I have mentioned. Now, though such conduct has been successful in many instances, I am concerned to state, that it has failed in some others; and, when I clearly ascertain that I am not likely to succeed, I cease to make farther attempts by the introduction of bougies, and pursue only general methods, such as warm bathing, bleeding by leeches, &c. When there are strictures, which it is right to enlarge, and when the irritation of the prostatic part of the urethra is not relieved by the measures which have been suggested, I pass the bougie through the last stricture, without

carrying it on, so as to irritate the tender part of the urethra, which lies behind it. A knowledge of the nature of diseases cannot but be desirable, even though it does not enable us to cure them all. If strictures are removed, and dysury remains, I believe it is common to consider it as arising from an irritable bladder ; now, though this may be generally true, there are many exceptions. I do not find that attention is paid to the description of cases, which makes the subject of the present paper : I was unacquainted with them till I met with the cases which I first mentioned ; the knowledge which I have thus obtained has enabled me to afford relief in many cases, and has prevented me from error in others.

SECTION II.

On the constitutional Origin and Treatment of Diseases of the Urethra.

HAVING in the preceding section pointed out one cause which renders strictures and other diseases of the urethra difficult of cure, in this I shall advert to another ; I mean, a state of irritability and disorder of that canal, produced or maintained by constitutional causes. To explain my ideas on this subject, I wish, in the first place, to excite the attention of the profession to the constitutional origin of disorders of the urinary organs. That they are very liable to be disordered by the state of the health in general is very apparent. Indigestion becomes a cause of foul and unhealthy urine, in consequence of much unassimilated matter being conveyed into the blood with the chyle. Nervous irritation affects the kidney and impairs its functions, so that whilst under its influence, scarcely any thing but water is separated by that organ from the blood. The nervous irritation at the same time operates on the bladder, and creates a frequent and sometimes urgent desire to void this unstimulating urine. Many persons during the day, or until they have dined, are greatly incommoded by this circumstance ; whilst on the contrary, after dinner, nervous irritation ceasing, and the urine becoming in consequence loaded with salts and animal matter, the bladder will retain the acrid urine, even in a large quantity, for a great number of hours.

In other cases, nervous irritation takes place, and limpid urine is frequently voided after dinner ; which I merely mention, because it may tend to throw light on the cause and nature of the nervous irritation.* If the kidneys and bladder

* The qualities of the urine are sometimes the only circumstances by which we can discover that there is general irritation of the nervous system ; they also denote imperfect digestion ; they may further indicate the state of the blood ; and for all these reasons they deserve particular attention and investigation.

can thus be operated upon by nervous irritation, it is reasonable to suppose, that the urethra will participate in the affection; and I am convinced, by numerous observations, that many diseases of the urethra, in both sexes, originate from a continuance of this kind of constitutional dysury. The cases of such diseases occurring in females who have passed the middle period of life, will probably be considered as affording the most unequivocal proofs of the correctness of these opinions. Under such circumstances, I have known, in different instances, strictures in the urethra, induration and tenderness of the whole tube, and even ulceration of its orifice to ensue. Though I have seen relief obtained in cases of this description by bougies and local remedies, yet I believe the treatment of such diseases ought to be constitutional, and that such treatment will succeed in curing the disease without local remedies. I know one instance in which the dysury had been very severe, and two considerable strictures had formed in the urethra; there was also a thickening accompanied with whiteness and hardness of the membrane of the vagina, causing a contraction in the orifice of that canal; yet all dysury ceased, and no inconvenience was experienced upon the patient's acquiring better health; which change was affected partly by medicine, and partly by removal into the country. Women will suffer a great deal from these disorders before they reveal their distress; and when from the urgency of the symptoms, and the belief that they have a stone in the bladder, they are willing to submit to examination, the disorder may be speedily and completely relieved and cured by means which have the effect of tranquillizing nervous irritation. It may be useful to relate a case in proof of this assertion.

CASE V.

A lady, between thirty and forty years of age, who had long suffered very considerably from dysury, agreed to permit an examination to be made of the nature of a disease,

which, from the severity of its effects, she could but believe to be of a very serious and alarming nature.

On inquiry, I found, that though she voided her urine frequently, and with great pain, yet it flowed freely, and that she did not suffer that extreme and continued pain afterward, which is generally the consequence of the stone.

I found also, by inquiry, that her bowels were not in a proper state, and her tongue was much furred. Supposing that a state of nervous irritation might be caused or aggravated by disorder of the digestive organs, I objected to making any examination of the state of the urethra, &c. till the functions of those organs were put right by medicine, because I was aware that nothing but a conviction of the indispensable necessity of examination would have induced her to submit to it. In a very short time, the state of the *primæ viæ* being corrected, and her health in general amended, all dysury completely ceased.

Dysury of this description is liable to occur in paroxysms. I have known it alternate with disorders of the bowels, and with rheumatic affection, which, I think, shows that there is a common constitutional origin, producing such various complaints; and I repeat, that I have known such dysury lead to actual disease of the affected organs. It is very common for men who have been married many years, and who, perhaps, never had gonorrhœa (or if they had in their youth, it is probable that it had left no disorder in the canal of the urethra,) gradually to acquire, as they advance in life, diseases of the urinary organs. Surely, then, the origin of such diseases must be regarded as spontaneous, and likely to be induced and maintained by whatever occasions irritation in the affected organs.

There is, however, no period of life exempt from this kind of dysury. Children are frequently much affected by it, and at that age when the bodily powers are generally in the greatest vigour, if they become disordered, dysury occurs in common with other diseases. I have mentioned in the first part

of these observations, in speaking of the constitutional origin of local diseases, that I have known dysury of this description.

I subjoin another striking case of constitutional dysury occurring in a child.

CASE VI.

A child, about two years of age, became affected with dysury, for the relief of which various means were tried without benefit; on the contrary, the symptoms increased, and strikingly resembled those occasioned by a stone in the bladder. The calls to void the urine were frequent and urgent, and the pain afterward very severe. There was an elongation and stricture of the orifice of the prepuce which induced a surgeon who attended the child, to divide that part, as he thought it might contribute to the difficulty experienced in expelling the urine. Under these circumstances, the child was examined by a surgeon of great professional eminence, who had no doubt that the symptoms were caused by a stone, which he thought he felt; yet recommended that no operation should be attempted till it had increased in size. The child continued to suffer in the same manner for two years, when I was desired to examine him. I could not, however, discover any stone, and upon inquiry, I found that the child complained of considerable pains in his loins, and that his digestive organs were greatly disordered in the manner that I have previously described in these observations. Unirritating and undebilitating doses of the pilul. hydrarg. were given every second night, and strict attention was paid to keep the bowels clear, without inducing what is ordinarily called purging. The effect of this treatment was surprising; all the symptoms were immediately relieved, and they completely ceased in a month, at which time the functions and secretions of the digestive organs appeared to be so correctly healthy, that all medicine was discontinued. After some months, a slight relapse of dysury took place, which immediately ceased, upon resuming for a short time

the same plan of treatment ; and the boy has since remained perfectly well, though several years have elapsed.

If, then, irritation of the urinary organs, even to a degree productive of local diseases in them, may occur from constitutional causes, and more apparently from a disorder of the digestive organs, I need not then urge the propriety of our endeavouring to keep the latter organs, as nearly as possible, in a state of health, whilst we are endeavouring to relieve the diseases of the former by local measures. Of the beneficial effects of such conduct, I could relate many instances, but it does not seem necessary to detail cases in proof of so self-evident a proposition. I have explained, in the first volume, my ideas of the mode by which relieving disorders of the digestive organs relieves and cures local diseases ; and in local diseases of the pelvic viscera another reason may be suggested for the benefit which is obtained. It has been observed, that in disorders of the digestive organs, the lower part of the intestinal canal is frequently most affected. Irritation in the rectum must affect the plexus of nerves, from which not only that intestine, but the pelvic viscera in common derive their energies ; and thus it may lead to a similar participation of disease.

SECTION III.

On some Effects of Diseases of the Urethra.

I SHALL take the present opportunity of exciting the attention of the profession to some effects of disorders of the urethra, which have not hitherto received in my opinion a sufficient share of attention. If a violent affection of this canal can produce a corresponding degree of inflammation of the testis, as it frequently does in gonorrhœa, it may reasonably be expected, that a less degree of disorder in the urethra may produce a milder irritation of the testis, which may terminate in a slow disease of that gland. Indeed it has appeared to me that there are two circumstances causing irritation and consequent disease of the testis : one is, disorder of the urethra ; and the other, that derangement of the constitution at large, which I have described in the first part of these observations. I need not point out how inefficacious any local treatment of an irritated or diseased gland must be, whilst we leave the causes which produced it still to operate in full force for its continuance. I proceed to relate a few cases, in which irritation originating in the urethra first caused, and subsequently maintained, disease of the testis.

CASE.

A gentleman who had been confined with a chronic disease of the left testis, which had proved very refractory and irreducible by various means employed for its cure, applied to me when the gland was four times its natural size, and very hard. I recommended the application of three or four leeches once a week, a bread and water poultice at night, and aq. ammon. acetat. during the day.

This treatment was pursued for six weeks with very little benefit. I then changed the poultice to one made of linseed, over which mercurial ointment was spread. The ointment was also rubbed upon the scrotum in the morning, and a soft rag applied over it. The patient likewise took a compound calomel pill every night.

This treatment was also persevered in for about six weeks, but with no manifest advantage. I then put two setons* through the scrotum, and continued the poultice at night and a dressing of spermaceti cerate during the day. Under this treatment the testis diminished very considerably in size, but at the end of two months, the setons had gradually come out, in consequence of the ulceration which they occasioned. Shortly afterward, the testis became painful, and it enlarged to its former dimensions, so that no advantage was obtained from all these endeavours to reduce the disease. I had frequently inquired of this patient respecting the state of his urethra, and been as often told that he was not conscious of any disorder existing in that canal. Now, however, on repeating my inquiries, he said, that he had remarked the stream of urine to be small, and that the calls to void it were more urgent than formerly. On passing a bougie, I found two strictures considerably contracted, and a tender state of the urethra where it passes through the prostate. These diseases being relieved, all irritation in the testis ceased, and the enlargement rapidly subsided ; so that in two months it was scarcely larger than the other, and all disease had ceased. This happened without any other local application than a poultice at night, and support by a bandage. Even the poultice at night was soon discontinued. This patient has had no return of disease of the testis, and many

* Setons may be conveniently made and worn in the scrotum. I first employed them in conformity to those general principles which regulate our conduct in the treatment of local diseases ; and I have known several instances of diseased testis, which resisted various local modes of cure, and even considerable courses of mercury, yield, and get well when setons were employed.

years have elapsed since the occurrences which I have been relating.

The following case was drawn up by a medical man, of considerable information and talents, who was himself the subject of it, and who was convinced with respect to his own case of the truth of those opinions which I am now offering to the public.

CASE.

—————, ætat. thirty, about four years since had an uneasy sensation in both testicles, which, however, occurred so seldom, and was so trifling, that he paid little attention to it; about a twelvemonth after, he found the left testicle harder than natural, but not enlarged; for some time previous to this, he had been obliged to void his urine very early in the morning from great irritation to do so; but not too frequently during the day; and occasionally had a tightness and sense of constriction in the perinæum, with frequent aching pain in the glans penis. The testicle remained in the above-mentioned state (without pain or increase) till March, 1806, when he received a blow from an accident on horse-back: no violent pain was immediately felt, nor did any apparent alteration take place till about a fortnight after, when he perceived the testicle larger and much harder than it had hitherto been: and it gradually though slowly increased till the end of August, when he saw Mr. Abernethy. The testis was at this time of twice its natural size, hard and painful to the touch. Leeches were applied once a week, and the testicle was kept suspended, and wrapped during the day in a cloth dipped in tinct. opii. and water, and an evaporating poultice was applied at night. By this treatment it gradually became less, but the hardness still continued. He saw Mr. A. again in September, and was then desired to rub camphorated mercurial ointment upon the testicle, and cover it with a soap-plaster. The testicle still kept decreasing, but remained equally indurated till the twentieth of November,

when it swelled with considerable pain and irritation, and began to adhere to the scrotum.* He again saw Mr. Abernethy, who introduced a small bougie, and found a stricture about six inches from the orifice of the urethra, and a second the eight of an inch from the former. The bougie passed without much pain or difficulty through the strictures, till it came to the prostate, when much pain and sensation of heat, irritation, and a strong inclination to make water were felt; the bougie, however, passed into the bladder, and was closely held by the spincter. The perinæum was then ordered to be bathed night and morning with warm water, and a bread and water poultice to be applied to the testicle, which were done, and at the end of the week, the pain and irritation in the testicle were greatly relieved; the same bougie was then passed, but with greater ease, and the painful sensations which had before been felt on its entering the prostate were much diminished. The warm bathing and poultices were continued, and the same bougie passed at the end of the following week with still greater ease and slighter sensations. At the end of the third week the strictures were touched with kali pur., which produced little irritation; and on the week following a much larger bougie passed with ease; the warm bathing and poultices being continued in the interval. During the three following weeks the large bougie passed with great ease: no irritation was felt after it, and the sensations, whilst it was going through the prostate, were slighter each successive time.

The testicle at the end of this time (seven weeks) was reduced to its natural size, and was become nearly undistinguishable from one that had never been diseased.

Shortly after the first introduction of the bougie, all the shooting pains and occasional uneasiness of the testis ceased, and it so rapidly and regularly declined as the state of the urethra amended, as to leave no doubt but that the amend-

* The testis was now about three times its natural size, and at the upper part of the epididymis, the scrotum had adhered to the subjacent part, and was so inflamed as to indicate the probability of the formation of an abscess.

ment of the testis is to be ascribed to the relief of disorder in the urinary canal.

CASE.

A gentleman, between twenty and thirty years of age, consulted me on account of a hydrocele, from which I discharged about six ounces of fluid. The testicle did not appear enlarged, but both it and the bag of the tunica vaginalis seemed very tender to the touch. I recommended that the parts should be supported, and that Goulard's wash should be applied. In about six months the tunica vaginalis was more distended than at first, and as the part was troublesome from its size and sensations, it was again punctured ; and the same circumstances were noted upon the evacuation of the water. The hydrocele again collected, and when it was full, which happened in about six months, the patient was desirous of having the tunica vaginalis injected, in order that he might be made radically well. As there was nothing prohibitory except the tenderness, I consented to his desire ; but when the fluid was discharged this time, he complained of greater pain than formerly, and could scarcely bear me to touch the testicle, which made me dislike to perform the operation, and it was therefore postponed till the next time that the hydrocele should become full. I thought it right, however, to direct the application of leeches, once a week, and of linen kept damp with Goulard's wash.* Under this treatment, the hydrocele filled very slowly. After four months had elapsed, the patient consulted me relative to

* I have known many cases of hydrocele, the consequence of irritation and inflammation, cured by evaporating washes ; and it would be right to distinguish the kind of hydrocele, upon which such treatment may be expected to have beneficial effect. Without such discrimination, a surgeon, seeing a hydrocele cured by these means, would prosecute the same measures in an indolent, and, as I may call it, dropsical hydrocele ; or finding the means fail in many cases from their indiscriminate use, he may be induced to consider the treatment upon the whole as inefficacious ; and thus neglect it in cases in which it is likely to be beneficial.

sores which frequently broke out upon the prepuce ; some of which were very tardy in healing. He also was subject to a considerable collection of that substance which is secreted to moisten and lubricate the prepuce. I told him that these symptoms were the effects of irritation of the prepuce, and was led to inquire more particularly into the state of the urethra than I had done before, because I thought both the disorder of the testis and the prepuce might originate in the same cause, that is, disease in the urethra. On examining that canal with a bougie, I found strictures, and a tender state of it where it passes through the prostate. By local warm bathing, and the occasional and gentle use of bougies, the morbid sensibility of the canal was diminished. The strictures were touched with kali purum ; and in conclusion, I could pass a large-sized bougie without occasioning any particular uneasiness in one part more than in another.

The effect of this treatment was, that the remaining fluid of the hydrocele was soon dispersed, and the testis was no longer irritable or painful when compressed, so that even the suspensory bandage was laid aside, nor has any inconvenience been experienced since that time, which is more than four years ago.

The sores also on the prepuce healed, and that part was much less irritable, but it still remains so in some degree ; indeed sores have been since contracted from sexual intercourse, which circumstance may perhaps have contributed to prolong the disorders of that part. I also suspect that the urethra may again have become in some degree irritable.

In the foregoing case, it is said that the habitual occurrence of sores on the prepuce led me to suspect disorders of the urethra ; and this is an effect of such disorders, which I think has been but little adverted to, and which is nevertheless deserving of particular attention. That disorders of the urethra do in many cases, cause temporary or continual irritation in the external parts which are continued from its orifices, I shall prove by the recital of a few cases.

CASE.

A gentleman, between forty and fifty years of age, had for fifteen years been subject to sores about the prepuce and glans, so as to oblige him to pay constant attention to prevent and control them. He had consulted many eminent surgeons, who recommended various washes and modes of treatment. A new application had generally the effect of healing the sores, but when persisted in for some time, gradually lost its effect. When the patient consulted me, the whole of the skin covering the glans, and lining the prepuce, was thickened and white, and the prepuce was so thickened that though it was naturally large and loose, it was difficult to unfold it. There were numerous sores of an oblong form in the transverse direction, appearing like chops, covered by adhering pus. I told the patient that it was necessary to inquire whether there were any cause maintaining this irritable state of the prepuce, and mentioned that I had observed it very frequently to depend upon strictures of the urethra.

The patient had no suspicion that he had such disorder, for he voided his urine readily, and not much more frequently than is common. Upon examining with a bougie, however, several much contracted and very firm strictures were discovered; and these being relieved, the sores on the prepuce healed without any further attention, than what cleanliness required. The foreskin became soft and pliant, as did also the skin which lined it, and is extended over the glans. This case occurred many years ago; and as I have not seen the patient since, I conclude that the relief which he thus obtained was permanent.

To show that strictures may exist in the urethra, and may perhaps prove the cause of more vexatious disorders, though the original exciting cause escapes observation, I may mention an instance which occurred to a medical man.

CASE.

This gentleman had been subject to sores which frequently broke out on the prepuce without any evident cause. There was not, however, any striking evidence of general irritation in that part, as in the former instance. Sometimes the sores which occurred put on the appearance of chancres; and in consequence of the advice of his friends, he underwent a salivation. The sores for which the mercury was employed healed under the use of that medicine, but broke out upon its discontinuance. He then consulted me, and upon my mentioning my suspicions of strictures existing in the urethra, he smiled at the opinion, and said that it might be given to patients in general, but not to those of the medical profession. I told him that nothing would convince me that I was in error, but his permitting me to examine by means of a bougie. Two considerable strictures were found, and these being relieved, the sores healed under simple dressings. The gentleman, however, did not reside in London, and I know not the further history of the case, which I mention merely for the purposes that have been stated in the beginning.

I have also seen a very troublesome phymosis, in which the prepuce could not be retracted without great difficulty and pain, depending upon the same cause, in a case in which the patient had been long accustomed to the daily use of bougies;*

* As strictures of the urethra depend on a disordered state of parts of the canal, so when the introduction of simple bougies fails to cure them, the too frequent use of those instruments sometimes keeps up and aggravates an irritation, which might otherwise, perhaps, subside. This is a subject foreign to my present purpose; but I mention it to introduce the following case, which deserves publication.

A gentleman, more than fifty years of age, had for more than twenty years been in the habit of introducing bougies for himself, which he generally kept in for an hour daily.

At length his urethra became so irritable, that he could scarcely void his urine, which he was frequently called upon to attempt. Apprehensive of caustic bougies being employed, he consulted me, and I found I could introduce a small bougie without much difficulty: it halted at several strictures, but with very

but after the strictures had been touched with kali, and the constant use of bougie desisted from, the phymosis relaxed, and the prepuce could be retracted without the least difficulty or uneasiness. I have also known many cases of warts yield to the same treatment.

These cases are related to show, that irritation and diseases may be induced in parts which have a sympathetic connexion with the urethra, even where the original affection may have been too trivial to attract attention. It appears to me to be of the utmost importance to investigate, as far as possible, the causes of diseases; for how can we expect to cure the effect, while the producing cause continues to operate? The secondary disease may also become even of an established or malignant nature, if there be diseased propensities in the constitution or affected part.

Diseases in the canal of the urethra may not only cause such effects as I have represented, by producing a state of irritation on the continued surface of the glans and prepuce, but they may also cause sores contracted from sexual intercourse to be very irritable, peculiar, and slow in getting well. I have seen many such instances; but none in which the fact was more strikingly apparent than in the following case.

gentle pressure it passed through them. I recommended him to bathe the perinæum and contiguous parts with warm water, by means of a sponge, night and morning, and told him I wished to introduce the bougie again after three days had elapsed. He was extremely apprehensive that the passage would completely close during the interval, and strongly remonstrated against such inefficient practice. On the third day he acknowledged that he passed his urine more freely, and the bougie which I had first introduced went through the urethra without impediment. I took one of a little larger size, and passed it with the same sort of resistance which the first had met with. The warm bathing was continued, and by pursuing these measures for three weeks, I passed a bougie one-third larger than he had been able at the best of times to do for many years.

The patient now voided his urine in a large stream, and not more frequently than is common; in short he felt himself perfectly well. Since that time, no bougie has been introduced, except once, annually by myself, that he might be assured that the stricture had in no degree contracted.

CASE.

A gentleman, who had just arrived in this country, had connexion with a female, which was followed by general irritation of the prepuce, and surface of the glans. Shortly afterward six sores formed, three of which became of considerable size. I desired him to wash the parts three times a day with the poppy-fomentation, and to encircle the penis by linen kept damp with it, in order to lessen the heat of the part. He at the same time took five grains of the quicksilver pill night and morning.

After some days, he could no longer retract the prepuce, so that he was obliged to cleanse the part by means of a syringe. After a little time, a weak solution of *zincum vitriolatum* was tried, but the pain it occasioned was too severe to permit its continuance. It was therefore left off, but after four days tried a second time, when the pain which it occasioned was very tolerable, and as it diminished daily, it allowed us to increase the strength of the wash.

After a few days he was able to retract the foreskin, when the smaller sores were healed and the principal ones had granulated, so that a fungus bulged forth above their surface; they appeared of a tawny colour, and their edges were slightly thickened. I slightly touched these sores every third day with *argentum nitratum*, which appeared to do them much good. The vitriolic wash was continued. In about five weeks from the commencement of the disorder the patient was quite well. The mercury had occasionally affected the bowels, which obliged the patient frequently to omit his pill in the morning. It never affected the gums, nor did I urge the continuance of it, after his sores were healed, because I did not believe them to be syphilitic.

About three weeks afterward, being in company with some dissolute females, he had his passions much excited, and one of them forcibly compressed the penis with her hand. The irritable state of the foreskin again took place, and a great

number of sores broke out, particularly behind the glans, which appeared like chops, being long, and not wide, and the matter which they discharged adhered to the surface.

After a few days he could not retract the prepuce, so that I can give no distinct account of these numerous sores. It appeared that they were very fretful, for the external skin became inflamed opposite to them; and they gave much pain when pressure was made on the inflamed part.

The external inflammation and tenderness on pressure changed their situation, showing, that a sore which was most fretful at one time, became less so at another.

The sores were, however, so painful as to prevent the patient from sleeping; and as no amendment of the complaint took place in three weeks, though various local measures were employed during that period, the patient wished to use mercury, and I acquiesced in his desire. As this medicine formerly affected the bowels, I desired him to rub in two drachms by measure every night, which was done for one week, without any amendment in the sores, or indeed any perceptible effect on the constitution. The patient now complained of a pain in the perinæum, when he voided his urine; and I directed him to bathe that and the contiguous parts for seven or eight minutes, with comfortably warm water by means of a large sponge, three times a day. This produced a most evident diminution in the irritability of the sores, and convinced me that there was a stricture; I therefore introduced a bougie, and found two strictures, the front one of which was so tight and tough, as to admit but a small bougie to pass through it, which it grasped and indented. The warm bathing was continued. I touched the stricture with kali, as Mr. Whately has recommended. From the time that the stricture became an object of attention, the sores had so rapidly amended, that in a few days the patient was enabled to retract the prepuce; when it was found, that though the sores had been numerous and extensive, they had been merely superficial, and had not destroyed any part. From the time that I first passed the bougie and ascertained a

stricture, the mercury was discontinued ; nevertheless the sores healed so rapidly, that in ten days they were perfectly well.

After the sensibility of the stricture had been heightened by the touch of the kali, the patient complained of acute pain in the sores when he made water ; and once, when I touched some of the sores with *argentum nitratum*, he complained of equally sharp pain in the perinæum.

I lately attended a married man, who had been for many years tormented by occasional sores forming about the prepuce, which were so irritable, as to be prohibitory of sexual intercourse. In the last attack they were considered by several surgeons as syphilitic, but as they had not the characters of that disease, I dissuaded the patient from the use of mercury otherwise than as an alterative. This patient, upon taking food, had the pain and inflammation of his sores so aggravated, that he was obliged to rise from table, and bathe the affected parts with warm water. These sores immediately lost their irritability, and even rapidly got well, upon a stricture in the urethra being relieved by local warm bathing and the use of bougies.

I have still further to observe, with respect to the occasional consequences of diseases of the urethra, that many diseases of the glands in the groin originate from them. I shall not, however, detail any cases in evidence of this fact. It will be sufficient to say, that I have seen several cases of enlarged inguinal glands dispersed by relieving disorders in the urethra ; and I have seen instances of foul and irritable sores, losing their diseased characters, and healing from the same cause. The latter event is not, indeed, likely to be a frequent occurrence.

In a gonorrhœa, the glands in the groin are commonly irritated, and sometimes slightly swollen ; the swelling rarely increases and suppurates, except in cases where there is a predisposition to disease in those glands. If, then, irritation in the urethra, occurring from gonorrhœa, can thus affect the inguinal glands, it may be rationally inferred, that other

causes of irritation of the urethra may produce similar consequences. Nocturnal emissions are also commonly the effect of morbid irritability or disease of the urethra; and it seems, therefore, irrational to attempt to cure them by tonic medicines or sedatives without adverting to the state of the urethra. Indeed in many of the persons who are subject to these discharges, the morbid sensibility of the urethra is connected with a disordered condition of the digestive organs; which is of itself a sufficient cause of great weakness and hypochondriac feelings. After thus adverting to such causes, we cannot wonder at the terrors felt and described in cases of *tabes dorsalis*. That diseases of the urethra may exist, without producing the consequent diseases which I have been describing, is very manifest; that such diseases may arise, independently of the causes to which I have attributed them, is also evident. My object, therefore, is merely to announce, that I have very frequently observed the diseases which make the subject of this section to arise from a disordered state of the urethra, leaving it to the experience of the public to determine, how far such cases may be regarded as frequent occurrences in general practice.

ON INJURIES OF THE HEAD;
AND ON
MISCELLANEOUS SUBJECTS.



ON INJURIES OF THE HEAD.

SECTION I.

WHEN the Members of the Academy of Surgery in France, and Mr. Pott in England, severally inculcated to the surgeons of their respective countries the propriety and necessity of trephining the cranium under various circumstances consequent upon injuries of the head, they probably recommended a too free and frequent performance of that operation. Such appears to be the opinion of many respectable writers who have published since their time ; particularly of M. Desault of Paris, Mr. Dease of Dublin, and Mr. John Bell of Edinburgh. But although these writers unite in censuring the frequency of the practice, they are very far from being agreed in other respects ; and many material points seem to me to require still further elucidation.

Believing that the observations which I have had an opportunity of making at St. Bartholomew's Hospital enabled me to throw some light on this important and intricate subject, I am induced to submit to the public a short account of several cases that occurred there, and the inferences which I drew from them:

The difficulties connected with this part of surgery are sufficiently proved by this circumstance, that, notwithstanding it has at all times excited the attention of surgeons of the

greatest talents, and possessing the most extensive field for observation, much difference of opinion still subsists, and the practice that ought to be followed in particular cases yet remains a matter of dispute. It is not, indeed, probable, that any part of medical science can in a short time receive all the improvement of which it is capable ; for, in proportion as we advance in knowledge, we are led to remark many circumstances in the progress of a disorder, which had before passed without notice, but which, if known and duly attended to, would clearly point out to us the nature and remedy of the complaint. Hence the records of former cases are of much less value, as the symptoms about which we are now anxious to inquire have in them been entirely overlooked.

I was led to this remark by reading the Works of Hildanus, Wepfer, Du Quesnay, and others, wherein are to be found a number of interesting cases, which I have been precluded from mentioning, as the nature of them cannot be exactly ascertained in consequence of this deficiency.

Although I have been for many years attentive to the treatment of persons who had suffered injuries of the head, and also to the examination of the parts after death, where the case has terminated fatally ; I still perceive so many circumstances which require investigation, that I entertain no hope of ever being able to obtain, from my own experience, all the information which is wanted. I hope, however, that the hints offered in this Essay may have the effect of inducing surgeons to pay a closer attention to cases of this kind, and that thus, by their united observations, the public may at length become possessed of that knowledge which the labours of an individual could never supply.

In the accounts which we have of the former practice in France, it is related, that surgeons made numerous perforations along the whole track of a fracture of the cranium ;

and, as far as I am able to judge, without any very clear design. Mr. Pott also advises such an operation, even with a view to prevent the inflammation and suppuration of the *dura mater*, which he so much apprehended. But many cases have occurred of late, where, even in fractures with depression, the patients have done well without an operation. To confirm the accounts that have been given of such cases, and by this means to counteract, in some degree, the bias which long-accustomed modes of thinking and acting are apt to impress on the minds of practitioners, I shall relate the histories of five cases, that occurred at St. Bartholomew's Hospital in the space of twelve months; and afterward offer a few remarks upon the subject. The principal circumstances only of each case are related; for, as many examples of the same kind are to be found in various surgical books, a minute detail of particulars seems to be unnecessary.

Cases of Fracture of the Cranium with Depression, which terminated favourably, although no Operation was performed.

CASE I.

A woman, about forty years of age, was admitted into the hospital for a wound on her head. About a week before she applied for advice, her husband had knocked her down with a brass candlestick. She was stunned by the blow, and lay for some time senseless; but, on recovering, she felt no other inconvenience than the soreness occasioned by the wounded integuments. She had suffered some slight indisposition since the accident.

On examining the head, the right parietal bone was found denuded about two inches in extent; a fracture of the same length was also to be felt; and the bone on one side of the fracture was depressed about the eighth of an inch.—She

remained in the hospital a fortnight, without any bad symptoms occurring, and was then, at her own desire, discharged, although the wound was not perfectly healed.

CASE II.

A boy, about twelve years old, received a kick from a horse in Smithfield, which stunned him; and he was immediately brought to the hospital. The integuments of the forehead were divided by the injury, and the lower part of the os frontis and superciliary ridge of the frontal bone depressed at least a quarter of an inch below its original level; the depressed portion measuring about an inch and a half in length.

It is obvious that the bone could not be thus depressed without a fracture of some part of the basis of the skull occurring at the same time, on which account the case might be considered as more dangerous.—In less than two hours he had recovered from the immediate effect of the blow, being at that time perfectly sensible. Fourteen ounces of blood were taken from his arm; his bowels were emptied by a purge; and saline medicines, with antimonials, were directed to be given. He went on tolerably well for two days, at the end of which time evident symptoms of considerable irritation of the brain took place. He now complained of pain in his head; slept little; and, when dozing, often started, or was convulsed in a slight degree. To remove these symptoms, he was bled twice, took opening medicines occasionally, was kept quiet, and without light, and was allowed only a spare diet. By continuing this plan for about three weeks, he perfectly recovered.

CASE III.

A man, between thirty and forty years of age, received a blow on the forehead from a brick thrown at him, by which the frontal bone was fractured about half an inch above the orbit: the fracture measured two inches in length, and the

upper portion of the bone was depressed about the eighth of an inch. He was not even stunned by the blow, and walked to the hospital without assistance, complaining only of soreness in the wounded integuments. Sixteen ounces of blood were immediately taken from his arm; he was confined (much against his inclination) to a scanty and liquid diet, and was purged every second day.—This patient did not experience any illness; and the wound soon healed.

CASE IV.

A boy, about thirteen years old, had a fracture, with depression, of part of the temporal and parietal bones. By similar treatment, he also escaped without any material ill consequences; but in this case part of the injured bone exfoliated.

CASE V.

A girl, thirteen years old, had a considerable fracture, with depression, of the left parietal bone. She was not brought to the hospital until ten days after the accident. When admitted, she was feverish, had pain in her head, and the little sleep she got was very much disturbed: but, by the use of bleeding, with antiphlogistic medicines and regimen, she soon got perfectly well.

The cases above related are not offered to notice on account of any striking peculiarity attending them, but merely to show that such are not unfrequent, as they all occurred within the course of a year. From among a great number of similar cases, I shall select the two following, as the symptoms attending them were more violent than ordinary.

CASE VI.

A lad, seventeen years of age, had his head pressed between a cart-wheel and a post; by which accident the scalp on both

sides was turned downward, so as to expose the lower half of the parietal bones, the squamous part of the temporal, and also part of the frontal and occipital bones; about a quarter of the cranium being thus completely denuded. The periosteum was in several places stript off from the skull, the scalp much bruised, and the posterior and inferior angle of the left parietal bone was beaten in. The visible part of the depressed portion was an inch in length, and more than an eighth of an inch below the level of the cranium; but the fracture extended along the squamous part of the temporal bone toward the basis of the skull: it could not, however, be traced, as the temporal muscle had not been removed from that part by the injury.—The scalp, being cleansed, was replaced, retained in its situation by slips of sticking-plaster, and a slight pressure by bandage was applied. The boy was perfectly sensible, his pulse regular, and not quickened. He had bled considerably from the temporal artery, which had been divided by the accident: eight ounces of blood were, however, taken from his arm; and some purging medicine was administered next morning, which procured three or four stools.—The next day (*Friday*,) his pulse beat nearly 120 in a minute; his skin was hot and dry; and he complained of pain in his forehead. Twelve ounces of blood were taken away, and four grains of pulvis antimonialis ordered to be given three times a day. On *Saturday*, the former symptoms still continued, and were rather increased. The antimonial powder made him sick, or at least increased his disposition to be so. Fourteen ounces more of blood were taken from him; the vibratory feel of his pulse not being altered until that quantity was taken away: the blood, on standing, appeared very buffy. His skin, notwithstanding all this, still remained extremely dry; some antimonial wine was given, which produced vomiting. On *Sunday*, his pulse was evidently lowered by the evacuations he had undergone, but it was still quick, and sufficiently strong. The pain of the head remained as before. Having a sufficient number of stools, and the sickness still continuing, the antimonial powder was omitted. He was

bled, however, in the vena saphena, and his feet and legs were afterward immersed in warm water ; during which, he, for the first time, perspired copiously. A blister was also applied to his neck.—The scalp united, with only a trifling sup-puration over the fractured part of the bone ; and to this ready union, the lowering plan, by preventing inflammation, seems very materially to have contributed. The matter collected over the fracture was discharged by a puncture, and the boy got well.

CASE VII.

A lad, eighteen years of age, had the squamous part of the temporal bone beaten in ; the fracture ran horizontally, about a quarter of an inch above the zygoma, and could be distinctly traced with the finger, introduced through the torn scalp and temporal muscle, for two inches. The upper part of the bone was depressed about one-eighth of an inch ; and it was impossible to trephine below the fracture in order to elevate the depressed portion. The lad had recovered from the immediate stunning occasioned by the injury ; nor was there any symptom that indicated material derangement of the functions of the brain from the pressure which it sustained. He was bled largely, and took a purging medicine, and was moderately well on the following day. On the second morning he was again purged ; and when I saw him at noon nothing materially wrong appeared ; but when I came to the hospital, at eight in the evening, I found he had gradually become delirious, and that he then could scarcely be kept in bed. His skin was hot, and his pulse frequent and strong. These symptoms could be attributed to nothing but inflammation of the brain ; he was therefore immediately and largely bled. He now became quiet and manageable ; but the next morning his replies to all questions were incoherent, his pulse frequent, his skin hot, and his tongue dry. The bleeding and purging were repeated, and at night a blister was applied to his neck. On the following morning he was

sleeping and feeble, but his answers were rational; as the frequency and fulness of his pulse increased in the evening, he was again bled. The inflammation of the brain was now subdued, and the patient gradually recovered. The wound healed without any exfoliation of the bone, and when he was discharged from the hospital there was not the most trivial circumstance which could induce us to suspect that the brain had sustained any injury from the accident. His sleep was sound and undisturbed, and the sudden motion of his head in any direction occasioned no giddiness or inconvenience.

It appears very clearly, I think, from these cases, as well as from a great number of others to be found in books, that a slight degree of pressure does not derange the functions of the brain, for a limited time after its application. That it does not do so at first is very obvious; as persons are often perfectly sensible, and free from headach and giddiness immediately after the injury. Whether it may not produce such an effect at some remote period, is not so easily determined, since this cannot be ascertained but by a continued acquaintance with the persons who had received the injuries. All, however, whom I have had an opportunity of knowing for any length of time after the accident, continued as well as if nothing of the kind had ever happened to them. In Mr. Hill's Cases in Surgery, two instances of this sort are related; and Mr. Hill knew both the patients for many years afterward, yet did not perceive any inconvenience to arise. It deserves to be mentioned, too, that one of the patients was a sailor, and therefore, probably, led a life of irregularity as well as of exertion. The result of cases of this kind, which I have met with in authors, does not lead to the apprehension of any future mischief; nor is it easy to conceive that the pressure, which caused no ill effects at a time when the contents of the cranium filled its cavity completely, should afterward prove injurious when they have adapted themselves to its altered size and shape. Severe illness, indeed, does often intervene between the receipt of the injury and the

patient's recovery ; and many surgeons might be inclined to attribute this to pressure ; but it equally occurs where the depressed portion is elevated ; several instances of which I shall have occasion to relate, and many others are to be met with in authors. This is a circumstance which nothing but very extensive experience can show in a true light. If, for instance, a surgeon who was prepossessed with the opinion that elevation of the bone is necessary in every instance of depressed cranium, should have acted upon this opinion in the first, third, fourth, and fifth cases, and afterward have employed proper evacuations, his patients might, perhaps, have had no bad symptoms, and he would naturally have attributed their well-doing to the mode of treatment which he had pursued : yet these cases did equally well without an operation. If the same surgeon had been witness to the disturbance which arose in the second, sixth, and seventh cases, he would, without doubt, have attributed them to the continuance of pressure made by the bone ; yet these cases also did well by medical treatment only : and when the symptoms which come on thus are of the inflammatory kind, they may generally be removed by the same means. Many cases also are to be met with in books, and some are related in the subsequent part of this Essay, where not only great but even fatal mischief ensued, notwithstanding the brain had been relieved from pressure at an early period. Another surgeon, prejudiced against the use of the trephine, might, with equal injustice, consider the mischief, which ensues in certain cases, as entirely owing to the operation.

The degree of pressure which the brain can sustain without great injury to the system, may probably vary according to the disposition of that organ to be affected by it, the suddenness of its application, and the direction in which it is made ; and although it must be very difficult to obtain any precise knowledge on this subject, yet there is great reason to believe that the brain can bear more pressure without injury to it than was formerly supposed. The first of these circumstances seems evident ; for in some persons a slight

pressure produces severe symptoms ; whilst, in others, a much greater degree is borne without inconvenience. We can rarely judge of the effects of pressure when any part of the cranium is beaten in by a blow ; for in that case the shock generally occasions stupefaction. Internal hæmorrhages, perhaps, afford us the best criterion whereby to determine the effects of pressure on the brain. The eighth case will serve as an illustration of this remark, where it appears that a considerable hæmorrhage must have taken place before it deprived the patient of his faculties ; for he walked home, undressed himself, and went to bed, after the trunk of the middle artery of the dura mater had been ruptured. In cases of apoplexy, also, the hæmorrhage is generally very large before it produces those consequences which destroy life.

The authorities quoted by Morgagni, as well as his own observations, show that people may recover from apoplexy even after a considerable effusion of blood has taken place. But as the records of such cases are not common, and as it appears to me that further confirmation of them would be highly useful, I have obtained permission of Mr. Wilson to mention a remarkable case of this kind, which occurred to his notice.—A gentleman fell down suddenly, and remained for some time in that lethargic state which is usual in apoplectic cases ; but afterward gradually recovered his faculties both of mind and body, and continued to exercise them very perfectly for two years, when a second attack of the same kind took place, and destroyed him. Upon opening the head, the cause of his death became evident ; for a large quantity of blood was found in the ventricles, and at the basis of the cranium. But what seemed particularly worthy of attention, was a cavity in the right hemisphere of the brain, extending from the front to the back part of the cerebrum, being more than four inches in length, and more than an inch in breadth. Within this cavity were contained flakes of coagulated lymph, and a bloody-coloured fluid, which Mr. Wilson, whose abilities and accuracy of observation entitle his opinion to the

fullest credit, was convinced were the remains of the blood extravasated at the first attack.

I also examined the brain of a gentleman, with whom, for the last five years of his life, I was intimately acquainted. When I first knew him, he was slowly recovering from a severe fit of apoplexy, which had paralyzed the left side of his body. Though he could not raise his left arm to his head, nor move his left thigh and leg with freedom, yet he walked about moderately well, and could work in his garden. Every winter he was subject to fits of the gout, and every summer to such a plethoric and inflammatory state of the vessels of the head as to threaten another apoplexy. He was once immediately and most completely relieved from very distressing feelings from the latter cause, by the abstraction of ten ounces of blood from the temporal artery. The last fit of apoplexy, which I have mentioned, was the third, with which he had been afflicted. The first affected his speech, the second his right arm, and the third produced the effects which I have related. His bodily and mental powers remained however very vigorous, even during the five last years of his life. On dissection, three apoplectic cells were found. One was situated superficially in the left lobe of the cerebellum, one in the left hemisphere of the cerebrum, and one, which had probably been the cause of the last and greatest degree of paralysis, in the middle of the right hemisphere of the brain. Nothing but the membranes, which immediately invest the brain, covered the effused substance, which had become of a gelatinous nature. I do not exaggerate, when I say, that this cavity was large enough to have held six ounces of blood.

Though a slight degree of pressure does not immediately affect the functions of the brain, yet it may act in another way ;—it may excite inflammation of that organ, as it does of other parts of the body. Its power in this respect, however, will probably lessen by the part becoming accustomed to it ; and the cases on record, where fractures with depression have done well, as well as those of recovery from

apoplexy, are proofs that the cause which in the first instance was injurious by its pressure, may continue to exist without inconvenience. Such cases ought surely to deter surgeons, from elevating the bone in every instance of slight depression, since, by the operation they must inflict a further injury upon their patients, the consequence of which it is impossible to estimate.—From all, therefore, that I have learned from books, as well as from the observations I have made in practice, and from reasoning upon the subject, I am disposed to join in opinion with those surgeons who are against trephining in slight depressions of the skull, or small extravasations on the dura matter. In the latter, it is probable the compressing cause will soon be removed by absorption; and in the former, according to the observations of Mr. Hill* and Mr. Latta,† the bone will regain its natural level if the subject be young. In adults, however, and especially in persons of advanced life, this circumstance cannot be expected; so that in them the accommodation of the parts to each other, necessary for preventing future mischief, must be effected by a corresponding alteration in the form of the brain.

A circumstance, however, frequently occurs, that may render the surgeon doubtful as to what course he ought to pursue; this happens when, at the same time that the skull is slightly depressed, the patient labours under the effects of concussion. The circumstances, which generally serve to distinguish those two injuries, will be noticed hereafter. At present it is only necessary to observe, that, as the effects of the latter gradually abate, a little delay will enable the surgeon to decide upon the nature of the mischief, and take his measures accordingly. Where the patient retains his faculties, nothing farther is necessary than a continuance of the antiphlogistic plan; and should any inflammation afterward take place, the same means, employed in a degree proportioned to the urgency of the symptoms, will in most instances

* Cases in Surgery, p. 113.

† Pract. Syst. of Surgery, vol. ii. p. 172.

be successful without elevating the bone. This happened in four of the six foregoing cases, which are related without any view to this particular point.—But if, from a peculiar disposition of the brain to be effected by pressure, the torpor of that organ should continue; or if, after inflammation of the brain has taken place, the pressure should then appear to be particularly injurious, the elevation of the bone ought not, I think, to be deferred. And from some of the cases related by Mr. O'Halloran, in the fourth volume of the Transactions of the Royal Irish Academy, it appears that this operation, if not too long delayed, will give effectual relief under such circumstances.

The older surgeons certainly trephined unnecessarily, in consequence of their belief, that the brain was an organ of so delicate a structure, that the least degree of pressure would be highly injurious; whilst others, from having witnessed the frequent ill success attending the operation, and from having observed that many patients had recovered unexpectedly when it was omitted, seem inclined, too generally, to reprobate the practice. Under these circumstances, it appeared proper, by the recital of instances, to show what kind of cases would probably do well without having recourse to it. With this view I have laid before the public the preceding cases; and I wish, in conclusion, to offer, in this edition, a few additional remarks on the circumstances which would influence my conduct with regard to the immediate performance, postponement, or omission of the operation.

The preceding cases show that, in general, there is no necessity for trephining in such fractures of the skull as occurred in them. It may further be stated as an argument against the hasty performance of this operation, that it is likely to aggravate the inflammation of the brain, which in the majority of cases comes on in consequence of the injury.

If it can be shown, that injury done to the scalp and bone, where there is no fracture or concussion, may sometimes be productive of inflammation of the brain, it would then follow,

that the injury inflicted on these parts in the operation of trephining would probably aggravate the inflammatory symptoms, which are to be expected to succeed to all violent blows on the head. To show that disorder of the brain is likely to take place from its sympathy with the parts which contain that organ, I relate the following cases.

CASE VIII.

A coachman, standing on a small ladder, to clean the top of a carriage, slipped and fell, with his head against the window, which was drawn up at the time. The window being thus broken, the sharp edge of the glass divided and turned down the scalp to a considerable extent from off the parietal and frontal bones. In this state he came to my house, with the arteries bleeding profusely. I tied two of them, replaced the scalp, and sent him to the hospital: the next day he did not appear much indisposed; but after another day or two had elapsed, he suffered much from inflammation of the scalp, part of which was even in a sloughy state. The patient had, at the same time, violent fever, and great disorder of his stomach and bowels. Small doses of calomel and gentle aperients were given for the latter affections; and he also took saline and other febrifuge medicines. After about a week had elapsed, the scalp assumed a much better appearance, the inflammation having subsided, and the sloughs being detached. Nevertheless, his febrile state became aggravated, and a kind of delirium and symptoms indicating inflammation of the brain came on, which venæsection did not subdue. The patient died, and his head being examined, it was found, that the brain and its membranes had undergone considerable inflammation, which, from the degree of effusion between the tunica arachnoidea and dura mater, and between it and the pia mater, appeared to have lasted for a considerable time.

CASE IX.

A man had the scalp bruised and torn down from off the frontal bone by the wheel of a cart. He was not stunned at all by the accident. The bruised scalp mortified, and the bone was left bare. He remained in the hospital waiting for exfoliation, and as he had no illness, but little attention was paid to him. After about two months, however, he became weak and ultimately delirious, and died. On examination, an abscess, containing about one ounce and a half of pus, was found in the front lobe of the cerebrum beneath the dead bone, and full half an inch from the surface.

If, then, irritation and inflammation of the scalp and bone may sometimes produce similar affections of the brain and its membranes, this very circumstance affords an argument for performing the operation in a certain description of cases, in which, indeed, its necessity may not be immediately apparent. I allude to those cases in which, though the bone be but slightly depressed, and may not occasion decisive symptoms of pressure, yet it may be broken into many pieces, and the scalp be so bruised, or otherwise injured, as not to be likely to unite by adhesion. Inflammation and suppuration must now ensue in the scalp, and some of the pieces of the bone will probably perish, and must be detached by tedious processes, which may induce disease in the subjacent membranes of the brain, as well as in that portion of the organ which they invest. I have therefore deemed it necessary to trephine in some cases of this description; and I think it will be useful to relate briefly one case of this kind. It will also serve as a contrast to that which immediately succeeds to it.

CASE X.

A drunken woman was knocked down on Blackfriar's Bridge, by a blow with a cane, which had a round leaden head, about an inch in diameter. A circular piece of bone

was beaten in to the depth of a quarter of an inch, and starred or broken into many fragments. By dividing the scalp I had the power of reflecting a portion of the integuments, so that I could trephine the bone and remove the shattered and depressed pieces. I also took out a clot of coagulated blood as large as a walnut. The wound was closed by a sticking-plaster, a compress laid over the part, and bound on by sticking-plaster. The patient was largely bled, and a dose of purgative medicine was given.

It was difficult to determine whether the sleepy and stupid state of the patient was chiefly the effect of the injury or inebriety. She complained loudly during the operation. The next day, when the students of the hospital wished to examine whether the dressings were displaced or not, she refused to permit them; but on my entering the ward, she said, "Ay, now he is come, you may examine if you please." I need only add further, that a treatment calculated to prevent and control inflammation was strictly persevered in, and that the patient shortly became perfectly well.

CASE XI.

June 3, 1802. A coachman, twenty-three years of age, was thrown from his box. The middle of the anterior edge of the right parietal bone was fractured, and a piece about the size of a sixpence was slightly depressed. He soon recovered from the stunning occasioned by the fall, and did not come to the hospital till the succeeding day. As he was perfectly well, he was but slightly bled, and no bad consequences of this injury appeared for two months. At this time he came again to the hospital, complaining of spasms in his left arm. The wound, which was not yet healed, being examined, the depressed bone was found to be loose, and was removed, which alleviated the spasms. Soon afterward a portion of the external table of the skull also came away. In the middle of September his health seemed much deranged, and he continued to get weaker till the middle of October. The

dura mater had gradually become protuberant, and covered with a fungus ; it at last gave way, and coagulated blood was discharged, mixed with detached pieces of the substance of the brain. The left arm had now lost its sensation, though the patient could feebly direct its motions. On the 17th of October the patient became very ill, and much bloody serum was discharged from the wound. He was delirious during the night, but on the next day understood all questions proposed to him ; blood and brain were discharged through the wound. On the evening of the 19th he died. There was found a vacancy in the membranes of the brain, opposite to the deficiency in the bone, through which the effused blood and injured brain had been discharged. In other respects these membranes were perfectly sound. The whole right hemisphere of the brain seemed to be reduced into a pulpy and fetid mass, composed of a mixture of blood and brain ; except that the cortical substance, to the depth of about half an inch, remained sound. This large cavity communicated with the left ventricle under the fornix.

It may be further stated as an argument against the immediate performance of the operation of trephining, in cases where its necessity is dubious, that it deprives the brain and its membranes of that natural support which they receive from the bone. Under these circumstances, when inflammation comes on, the volume of the parts contained in the cranium will be so considerably augmented by the preternatural distension of their vessels, and subsequent effusion of fluids, as to be protruded up into one aperture. The dura mater is likely to give way, and the pia mater, becoming exposed, will be more subject to inflammation. It now sustains the pressure which was formerly supported by the dura mater, and in its turn ulcerates, and the brain will protrude and produce fungous excrescences. These circumstances are more particularly likely to happen in children ; in them, indeed, the dura mater is so firmly connected with the bone that it is rarely separated by accidental violence, and it is even difficult to tear off the bone, when it has been perforated by the trephine. The argument against immediately tre-

phining the cranium, unless urged to it by great necessity, applies, therefore, more strongly to cases of children than to similar accidents occurring in adults. These remarks show the necessity for the most copious evacuations after the operation of the trephine, in order to prevent as much as possible the augmentation of the bulk of the contents of the cranium by subsequent inflammation and effusion, and which is productive of the prejudicial effects above stated.

With a view to obviate these, the plan of treatment instituted by Mr. Mynors, of Birmingham, highly deserves imitation. Having, by a simple division of the scalp, gained room for the application of the trephine, and removal of the depressed bone, he closed the wound attentively, and the scalp united by adhesion to the dura mater on which it lay. A gentle pressure, such as would give to the membranes of the brain that support which they were wont to receive from the bone, seems also likely to be useful.

There are, doubtless, some depressions of the skull that it would be absurd not to elevate by an immediate operation, for in them the pressure on the brain would of itself be productive of fatal consequences. The arguments which I have stated against the immediate performance of the operation, apply, therefore, in my opinion, only to dubious cases to those in which, perchance, upon the subsidence of the inflammatory symptoms, the pressure may be found not to be so great, but that it may be borne without detriment, though there is a risk that it may be detrimental.

Under these circumstances, by postponing the operation, we avoid the aggravation of the inflammatory symptoms which immediately succeed to the injury, and those consequences which arise from leaving an aperture in the cranium, into which the contained parts are likely to be protruded. I say, by postponing the operation, because, if upon the subsidence of the inflammatory symptoms, the pressure by itself is found to produce prejudicial effects, we are still at liberty to perform it, nor is it likely to be attended with that violent inflammation which arises from the injury and operation

conjointly. There must be dubious cases, for a degree of pressure which might be borne in one person without inconvenience, may, in another, occasion a torpid state of the brain, or other symptoms requiring its removal. Mr. O'Halloran's cases appear, therefore, to me very valuable, because they show that the operation of trephining will succeed under these circumstances; and, I know, that it has been twice performed of late in London with perfect relief of those symptoms for which it was required, and without being followed by any inflammation which was not readily controlled

SECTION II.

Injuries of the Head attended with Extravasation of Blood upon the Dura Mater.

IN the three following cases the skull was broken, and depressed at the part which covers the middle artery of the dura mater, by which means that vessel was lacerated. The attention of surgeons has not been sufficiently directed to this event, although it is of the utmost importance ; for the life of the patient might often be saved, if the nature of the accident were known, and the bone speedily perforated.—These cases likewise display, in a very striking manner, some of the effects caused by great pressure on the brain.

CASE XII.

A man was knocked down by the iron hooks of a crane, which fell upon his head from a considerable height. He was stunned at first, but soon recovered his powers of mind and body so far as to walk home, undress himself, and go to bed. A surgeon was sent for, who, on his arrival, found the man senseless, and in a deeply apoplectic state. The patient was immediately brought to St. Bartholomew's Hospital, when the functions of life seemed nearly suspended, as he was almost without sensation, his breathing being slow, irregular, and stertorous, with an unequal, intermitting pulse, and cold extremities.—The scalp covering the right parietal bone was wounded ; and on dividing it more extensively, a fracture with depression was discovered, running obliquely across the anterior and inferior angle of the parietal bone, over the temporal bone, and extending to the basis of the cranium, before the mastoid process. Several perforations with the trephine were made along the course of the fracture, and the

depressed portion taken away. A surprising quantity of coagulated blood was found upon the dura mater ; the coagulum being not less than an inch and a half in thickness, and six or seven inches in circumference. On the removal of this coagulum, the brain, which had been indented by its pressure, remained in the same state as before, nor did it ever regain its original level ; so that the patient experienced but little benefit from the operation, and he died about twelve hours after receiving the blow.

The dura mater, in this case, was not torn through in any part ; so that the blood could not have come from any vessel within that membrane. The source of such a profuse hæmorrhage, however, could not be doubtful, when it was known that the fracture crossed, and had probably wounded, the principal artery of the dura mater ; yet that vessel did not bleed after it was exposed.

CASE XIII.

A boy, about fourteen years of age, fell from a scaffold near two stories high, and pitched on his head. When brought from Islington to the hospital, he appeared to be almost in a dying state. The anterior inferior angle of the parietal, and part of the frontal bones, were found depressed. A piece of the cranium being taken out with the trephine, I discovered beneath it a large quantity of coagulated blood : I therefore made the next perforation nearer to the trunk of the principal artery of the dura mater, from which I concluded that this hæmorrhage had taken place. Having gently removed some of the coagulum, and introduced my finger into the aperture which had been made, I passed it as far as the second joint, before I could touch the dura mater. Fluid arterial blood now gushed out in such quantities as to keep the bone covered on which I was next to trephine. I ran no risk, however, in performing the operation ; for the dura mater was depressed so much that it could not be injured. But to guard against even the possibility of such an accident.

I introduced my finger between the dura mater and skull, and then perforated the bone with the trephine. Having thus removed a third piece, which was directly over the principal artery, I took out about four ounces of coagulated blood; upon which the dura mater quickly rose to its original level, and the hæmorrhage from the wounded artery ceased. I now entirely removed the depressed portion of bone, and thus uncovered all the dura mater which had been detached; so that I could distinctly feel its connexion with the cranium all round. This satisfied me that no more extravasated blood was left behind.—The lad, who at the beginning lay quite insensible, with a feeble, intermitting pulse, and laborious interrupted respiration, became restless, and expressed sensations of pain toward the latter part of the operation. Being now asked, how he found himself? he replied, Very well. Whether his head ached? he answered, No. If he was sure that he felt no pain? he said he was sure, and wished we would leave him alone.—I now took twelve ounces of blood from his arm, and he was put to bed, where he passed the night quietly. The next morning his bowels were completely emptied by a purge; and saline medicines, with antimony, were given, so as to keep the skin in a gentle state of perspiration. During the day he was sleepy, and lay quiet; answered questions very rationally, and complained of pain and giddiness in his head.—The third day he was disturbed, and less rational. Eight ounces of blood were taken from him, and a blister was applied to his neck. These means relieved him greatly, and he became quite tranquil and collected.—On the sixth day, symptoms of irritation again took place, and were again relieved by similar treatment. The dura mater had granulated, and the whole wound looked healthy. Every thing went on remarkably well until the fifteenth day, when the patient was seized with rigour and pain in his head, and the healthy aspect of the wound was also changed. The following day there was perceived, in the middle of the exposed dura mater, an aperture through which a protrusion of the brain arose, covered by the pia mater,

which retained its natural appearance. In less than twenty-four hours this tumour increased to the size of an orange ; its surface was dark-coloured, and irregular, and the pia mater no longer distinguishable. The following morning the boy died ; and his friends had removed the body from the hospital before I knew of his decease.

I regretted very much that I could not examine the nature of this kind of fungus or hernia cerebri, as it was a phænomenon which I had more than once contemplated with surprise, and the nature of which I was afterward enabled to ascertain.

CASE XIV.

A man was knocked down in Smithfield by a brick-bat, thrown at him by some villains against whom he had appeared as evidence upon a trial. He was immediately brought to the hospital ; but in a state of profound apoplexy.—The right side of the frontal bone, and the lower part of the parietal, were beaten in ; the area of the depressed piece being two inches in diameter. After making three perforations in the circumference, I was enabled to remove the depressed portion. I then took out a large handful of coagulated blood, which lay upon the orbitary process of the frontal bone, and had so pressed back the anterior lobe of the brain, that I could, with my finger, touch the transverse spinous process of the sphenoid bone. The brain now rose slowly, in consequence, I suppose, of the blood gradually finding its way through the compressed vessels ; and the man began to show signs of returning sense.—He was bled, and his bowels were emptied by a purge. The next day he was so far recovered as to give an imperfect account of the accident ; but on the third day, he died convulsed.

On dissection, some blood was found between the dura and pia mater, and traces of inflammation appeared on the latter membrane.

Mr. Will, of Dumfries, relates a case (the fifth.) where the

artery of the dura mater was ruptured without either fracture or depression of the skull; and when he trephined a second time, four days after the accident, he found so large a coagulum of blood lying upon that membrane, as to make him afraid of removing it all at once: but on taking out a few ounces of it, the patient, who had hitherto lain in a state of apoplexy, looked up, on being spoken to, like one awakened from sleep,—knew, and named every body, and raised the arm belonging to the opposite side, which had been paralytic from the time of the accident.

In Mr. Latta's Surgery, also, a similar case (as shown on dissection,) is related, in which an uncommon slowness of the pulse, and coma without stertor, were the symptoms produced.

These cases show that a fracture of the skull is not likely to be followed by an equal degree of extravasation in every part, as the vessels connecting the dura mater to the cranium are, in most parts of that membrane, of a small size. If these are accidentally ruptured, a slight hæmorrhage ensues, which soon stops, and only a thin stratum of coagulated blood is found when the bone is removed. But if the fracture happens in the track of the principle artery of the dura mater; if the trunk, or even a considerable branch of that vessel be torn, the hæmorrhage will be profuse, and the operation of the trephine become immediately necessary to preserve the life of the patient. In the three cases that I have related, the operation was done very shortly after the accident; in the first case, the brain was so compressed that it did not regain its level; in the third, it rose slowly as the blood found its way through the vessels; and in the second, it rose quickly, and the functions of the brain were as quickly restored. It can scarcely be doubted, then, that if the operation had been performed in these cases as soon as it became necessary, when, perhaps, only one instead of many ounces

of blood were poured forth from the torn vessel, the lives of the patients might have been preserved.

It is of great importance to distinguish accurately the nature of such cases ; and the distinction is not difficult when there is an interval of sense between the blow and the stupor occasioned by the effused blood. In the first related case, for instance, the nature of the accident was made sufficiently evident by this circumstance. But though we are assured that the patient labours under the effects of compression, we cannot, in many instances, know the situation of the compressing cause. In other cases, again, where there is no interval of sense after the accident, we are at a loss to determine whether the senseless state be the effect of compression or of concussion. Every surgeon must acknowledge that it would be a very desirable thing to ascertain when blood is effused between the dura mater and the skull ; for if the extravasation has happened in the more interior parts, a surgical operation is not likely to afford relief.* Now, if the extravasation which compresses the brain be situated immediately beneath the bone, I think there are signs by which it will be disclosed ; and as sufficient notice has not been taken of these, I wish particularly to call the attention of surgeons to them.

I have already said, that unless one of the large arteries of the dura mater be wounded, the quantity of blood poured out will probably be inconsiderable ; and the slight compression of the brain which this occasions may not be attended with any peculiar symptoms ; or perhaps it may occasion some

* In those cases which I have seen, where blood was extravasated between the dura and pia mater, and a division of the former membrane was made for its discharge, in some instances the serous part of it only could be evacuated ; for the coagulum was spread over the hemisphere of the brain, and had descended as low as possible towards its inferior part ; in others, though a portion of the effused blood was discharged in a fluid or grumous state, a considerable quantity which was coagulated remained behind, so that very little relief was obtained by the operation. It seems, then, that extravasation between the dura mater and the cranium is almost the only case which admits of being remedied by the use of the trephine.

stupor, or excite an irritation disposing the subjacent parts to become inflamed: but both these effects will gradually abate, nor will any inflammation ensue, if proper means are taken to prevent it. It is indeed highly probable, that, in many cases which have done well without an operation, such an extravasation has existed. But if there be so much blood on the dura mater as materially to derange the functions of the brain, the bone, to a certain extent, will no longer receive blood from within; and by the operation performed for its exposure, the pericranium must have been separated from its outside. I believe that a bone so circumstanced will not be found to bleed; and I am, at least, certain, it cannot with the same freedom and celerity as it does when the dura mater remains connected with it internally. I need hardly say, that, in the cases which I have related, there was not the least hæmorrhage. But it is right to mention, that I have also twice been able, by attending to the want of hæmorrhage from the outside of the cranium, to ascertain the extent to which the dura mater was detached within; and very frequently, when symptoms appeared to demand a perforation of the skull, I have seen it contra-indicated by the hæmorrhage from the bone, and, as the event has proved, rightly.

When the bone has remained long bare, the case may become perplexing. I once scraped a portion of the cranium which had been some time denuded, and found that it bled in such a manner, as, in my opinion, sufficiently to point out the adhesion of the dura mater, and of course the inutility of employing the trephine.*

Where the extravasation on the dura mater is but small, it will probably not require any operation. A slight hæmorrhage from the bone, which may happen from the anastomosing of the vessels within its substance, will not, in this case, lead to any injurious error. But from what I have observed, I

* In aged persons, and in those in whom the circulation has been rendered languid by the accident, the mode of distinction which I have pointed out, may indeed be less conclusive.

am inclined to believe, that even a small effusion of blood will diminish the hæmorrhage from the superincumbent bone.

Mr. Pott had an idea, that the bone would perish when the dura mater was detached for a considerable space from its inside ; and some cases which he has related seem to favour this opinion : but many other cases to be met with in authors, and many which have occurred to my observation, prove that the opinion was not well founded. Indeed we cannot suppose that the bone would perish from this cause ; for it still receives blood, not only from the anastomosing of vessels within its substance, but also from the pericranium externally ; and the success which has of late attended the operations for aneurisms in the lower limbs, shows that parts of great bulk and vascularity will continue to live when their usual supply of blood is very much diminished. If, however, the dura mater should be detached for a considerable extent from the inside of the skull, at the same time that the pericranium should also be stripped from its outside, I am inclined to believe that a portion of the bone would, in that case, die and exfoliate.

SECTION III.

Cases of Fungus, or Hernia Cerebri.

CASE XV.

A MAN, about forty years of age, was knocked down, and had a considerable part of the parietal bone, near the coronal suture, depressed, by a stone falling on his head from a high building. A portion of bone was taken out, and the depressed piece elevated. The patient, after this, seemed to obtain great relief from the stupor under which he had till then laboured. But the next day he became very restless and delirious, and frequently endeavoured to get out of bed. Evacuations were prescribed, and a blister applied to his head, by which means the symptoms were lessened, but did not entirely go off; they continued near six days, only varying somewhat in degree. His strength was now very much reduced; and though he became more tranquil, he was still delirious, and a coma supervened, which increased daily.—On the tenth day, upon uncovering the wound in order to dress it, a hernia cerebri appeared, rising through an ulcerated opening in the dura mater. The tumour at this time was not larger than a pigeon's egg: the pia mater, stretched over its surface, was inflamed; and a turbid cerum oozed at its side from beneath the dura mater. On the following day, the tumour had acquired the size of a hen's egg, was still smooth on its surface, and apparently ready to burst. On the day after, before the time of dressing, the man died.—Upon examining the tumour now, it was found larger than before, and of a dark colour, with an irregular granulated

surface ; which appearance seemed owing to coagulated blood which adhered to its surface, as the part had bled so much, that one half the cap which the man had worn was rendered quite stiff by it. In raising the top of the skull to inspect the contained parts, the tumour was in some degree torn from its basis. The pia mater was in general much inflamed, and, as well as the dura mater, was deficient at the place where the tumour protruded. A part of this tumour being cut off where it was lacerated, appeared to consist of coagulated blood of a fibrous texture. The brain was now taken out, and the tumour carefully examined, when it was found to be of the same nature throughout, and to have originated within the substance of the brain, about an inch below the surface ; but I could not discover the open vessel from which the hæmorrhage had proceeded.

The appearances, on dissection, clearly explained the cause of the symptoms which had taken place, and rendered it evident, that the disease under which this man had chiefly laboured was inflammation of the pia mater. The nature of the tumour, also, was not less satisfactorily pointed out. It was plain, that, in consequence of the brain being injured to some depth beneath the surface, disease of the vessels, and consequent effusion of blood, had ensued ; that the effusion was for a time restrained by the superincumbent brain and its membranes ; but these gradually yielded to the expansive force exerted from within, and at last giving way altogether, the fluid blood oozed out and congealed upon the surface of the tumour. It appears very probable, that the disease frequently described by the term *hernia cerebri*, consists, as in this instance, of a tumour formed by coagulated blood ; for an organized fungus could hardly be produced in so short a time as that in which these tumours are usually formed.

CASE XVI.

A carpenter, while at work in a newly-built house, was crushed by a part of the wall falling in upon him. His

abdomen was bruised, his clavicle broken, and his head wounded. Beneath the wounded scalp the right parietal bone was found fractured and depressed. He was slightly comatose for many hours after being brought to the hospital, yet answered rationally to those questions that were put to him. As the coma, however, remained, and his pulse did not beat with the freedom that is usual, the surgeon, under whose care he was admitted thought it right to trephine him. Accordingly, one perforation being made, the depressed bone was elevated. No blood was found upon the dura mater, nor did any thing indicate the propriety of using the trephine a second time. The patient was largely bled; and saline medicines, with antimony and opium, were given. As he complained much of pain in his belly, fomentations were applied to this part, and clysters administered occasionally. He was again bled on the second and fourth days after the operation. At the end of a week the antimony was omitted, on account of his weakness; and he seemed to get rather better, until December 7, twelve days after the accident, when a hernia cerebri appeared, rising through an aperture in the dura mater, opposite to the perforation in the skull. It increased rapidly in size, and exhibited the same appearance described in the foregoing case.—Two days after this the patient died.

On examining the head, the dura mater was found every where adherent to the skull; but on its inner layer there was a secretion of pus. The hernia cerebri, which had pushed up through an ulcerated opening in the dura mater, was of a fibrous texture, and evidently formed of congealed blood deposited in the medullary part of the cerebrum; the containing cavity being about an inch diameter, and its parietes appearing to be the substance of the brain condensed by pressure. I was equally unsuccessful here in my search after the vessel whence the blood had issued. The ventricles of the brain were full of a serous fluid mixed with blood, and a large abscess was also found in the spleen.—In this case the mental faculties were not deranged as in the

former. Both the symptoms and dissection show the disease to have consisted in the effects of concussion, with inflammation of the dura mater, and subsequent effusion into the ventricles of the brain.

The opinion I had formed respecting the nature of *hernia cerebri* was now confirmed; and I think it received additional illustration from the following case, although the disease was in a different part of the body.—A patient in the hospital had a disease in the head of the tibia, from whence there arose an unhealthy fungus, which Mr. Blicke removed; and afterward the bone was kept bare by caustic applications, in hopes that a separation of the diseased parts would take place. The patient, however, became feverish, and his health was much impaired. On the cessation of the fever, there suddenly arose, within the wound, a fungus-like substance, about the size of a large apple, which seemed to sprout from the bone; it was of a livid colour, and its surface appeared as if covered with sloughs. I took off the tumour, which was nothing but coagulated blood, with the knife; and some blood oozed from its basis, but the hæmorrhage was stopped by the application of lint. In a few hours, however, a similar fungus-like tumour arose. As both the size and situation of the open vessel were unknown, and as the patient could neither support the loss of much blood, nor the irritation which an extensive wound, made in search of the artery, together with that arising from the diseased bone, would infallibly produce, it was judged best to remove the limb. This was accordingly done; and upon injecting water into the popliteal artery, it was found to be a branch of that vessel which had given way.

It seems that Paré, and the surgeons who lived about his time, often mistook the tumours that arose out of the cranium, for aneurisms, on account of their pulsatory motion. M. Louis, in the *Mém. de l'Acad. de Chirurgie*, tom. V. has well distinguished the nature and treatment of those proceeding from diseases of the dura mater or bone. There may,

perhaps, be tumours of various kinds arising from the pia mater and brain ; but if there are such, I believe they have not been discriminated ; and the accounts given of many of them by authors are similar to those just recited. They have generally been treated of under the name of fungus, or hernia cerebri : and if the effused blood of which they consist ever acquired vascularity, they might then deserve that title : but none of those that I have just noticed were of an organized structure.—Their formation seems to proceed from an injury done to a part of the brain by concussion or contusion, which has terminated in a diseased state of the vessels, similar to what occurs in apoplexy. The morbid state increasing, one or more vessels give way, and an effusion of blood into the substance of the brain ensues, which, if the skull were entire, would probably occasion apoplexy, but, where there is a deficiency of bone that allows it to expand, presses the surface of the brain and its meninges through the vacant space. The dura mater soon ulcerates, and the tumour, pushing through the openings, now increases with a rapidity proportioned to that with which the hæmorrhage takes place within. At last, the pia mater, and the stratum of the brain, which cover the effused blood, are so extended as to give way, and the blood oozes out and coagulates.—Thus, the quick growth, and all the other phenomena observable in these tumours, are satisfactorily accounted for.

The plan of treatment to be adopted with tumours of the kind which I have described, is next to be considered ; but as I have had no opportunities of acquiring knowledge as to the treatment of these diseases, since I became acquainted with the nature of them, I can only offer a few general remarks on this subject.

Where no bad symptoms precede the appearance of the tumour, or where they go entirely away upon its being freed from the confinement of the dura mater, it may, perhaps, be most prudent not to interfere in the treatment of the complaint : for probably the hæmorrhage will cease, and the

coagulum will drop off in pieces,* or gradually waste away, and be no more renewed.† All that appears necessary, then, under such circumstances, is to cover the tumour and sore with some mild dressing, carefully avoiding all pressure, which both reason and experience show is likely to be attended with bad consequences. Should the bulk of the tumour, however, become inconvenient, or render pressure from the dressings unavoidable, the practice which present experience has shown to be most successful, consists in occasionally paring off the tumour with a knife. In this manner Mr. Hill treated several cases with success.

But if the tumour continues to increase, and if the patient suffers a train of bad symptoms, apparently arising from irritation and pressure made on the brain, some further attempt to relieve him seems to be required. Under these circumstances, we have reason to suspect that the coagulum, from want of room to protrude, is enlarged internally; or that by plugging up the orifice in the bone, it prevents the escape of some fluid collected within the cranium.‡ The obvious mode of relief here appears to be, to enlarge the opening in the bone in proportion to the extent and increase of the tu-

* See a case in the *Edinburgh Medical Commentaries*, vol. i. p. 98., where the tumour continued to increase for fourteen days, and had acquired the size of a goose's egg, when it dropped off in pretty large pieces. A similar case is related in the *Medical Museum*, vol. iv. p. 463.

† Fabricius Hildanus relates a case in his fifteenth Observation, where the tumour arising from the brain became, in 24 hours, as large as a hen's egg, and afterward gradually disappeared.

‡ Mr. Hill, in relating a case of this kind, says, that he "was obliged to shave away the tumour, and push a lancet into its root as often as the stupor and other symptoms showed that matter was lodged there, by which the patient was uniformly relieved, and afterward recovered."—(See his cases in *Surgery*, p. 91, 92.) But very different was the event in two similar cases (one is recorded by Scultetus, in his *Armamentarium Chirurgicum*, Obs. XIX.; the other in the *Lond. Med. Journal*, vol. x. p. 277.,) in which repeated attempts were made to prevent the growth of the tumour by compression: one patient died at the end of a month; the other not until nearly six months after the accident. In the brain of each there was found, upon dissection, a large cavity, which had been formed by the accumulation of a fluid that could not escape, on account of the aperture in the bone being closed by the tumour.

mour. Many surgeons have objected to the removal of much of the cranium, lest protrusions of this kind should ensue ; but it is evident that these tumours arise from an injury and consequent disease of a part of the brain, the event of which must be more fatal if the bone were entire. A large removal of bone was formerly a frequent event ; but a protrusion of this kind very seldom took place.

But although, by thus allowing a free escape to the effused blood, we may prevent the injurious effects of its pressure on the brain, yet the degree of hæmorrhage may endanger the life of the patient.

The quantity of blood effused will depend on the magnitude of the vessels, or on their dispositions to bleed. As the disease is generally situated not far beneath the surface of the brain, there is less risk of its proceeding from the former cause. If it arises from the latter, it is very likely that the distention caused by the confinement of the effused blood would irritate the vessels, and keep up their disposition to hæmorrhage ; therefore the treatment already recommended is likely to diminish it. But should the quantity of the hæmorrhage seem to threaten the life of the patient, I should think it most proper to take away the coagulum, and to expose the cavity in the brain, in order to learn whether suffering some sudden loss of blood to take place, together with the exposure of the bleeding vessels, might not produce a beneficial change, and a cessation of the hæmorrhage. I am induced to propose this mode of conduct, from reasoning founded on analogy : for in other parts of the body a hæmorrhage will sometimes continue, notwithstanding a considerable pressure made by a large quantity of coagulum, together with that which the resistance arising from the closure of the external opening, and that which is occasioned by the dressings, conjointly produce. Yet, upon exposing the bleeding surface, the hæmorrhage will cease, and never afterward be renewed.

I am still further induced to propose this plan of treatment, because I do not perceive any other which carries with it

a probability of success. The impropriety of attempting to restrain the hæmorrhage by pressure has been shown; ligatures cannot be applied, and styptics are known, by experience, to be dangerous.

I shall extract one case from the first volume of the *Mémoires de l'Académie de Chirurgie*,* to show that the removal of the coagulum is not likely to be attended with any alarming consequences.—A young man received a blow on the right parietal bone, which occasioned a fracture; some bone was removed, and a hernia cerebri was afterward produced, which was repeatedly pared down with the knife. On the thirty-fifth day from the accident, the patient having intoxicated himself, while in this state, slipt his hand under the dressings, and laying hold of the protruding coagulum, tore it away with violence. The next day the surgeon found, that almost the whole of what he considered as corrupted brain, was removed, and a vacancy left, so deep, that he could see nearly to the corpus callosum. From this time forward the parts went on healing, until they got quite well; but the patient continued to labour under a paralysis of the left side, which had supervened the day after he received the blow.

It is obvious, from the nature of the substance of which the tumour is composed, that styptic remedies applied to its surface can have scarcely any effect in lessening its bulk, and none at all in putting a stop to its growth; and experience shows, that the more active of them are not only ineffectual, but highly dangerous. Hildanus, in his Fourteenth Obs. relates the case of a man who died in consequence of an empiric having dressed a tumour of this kind with alum and calcined vitriol. And Mr. Hill tells us, (p. 198.) that, after shaving off the protruding part, he once sprinkled the basis with some blue vitriol, and another time with red precipitate; but found that “his patient had a very bad day after each of these;” no doubt in consequence of their being dissolved by

* See the Memoire of Mr. Du Quesnay, 10th Observation.

the discharge, and insinuating themselves between the tumour and the edges of the skull, so as to get into contact with the sensible parts within ; for, that it was not owing to their effect upon the tumour, is evident from its indolence when he had removed it with the knife.*

* In most cases in which the brain becomes protruded from an augmentation of the contents of the cranium, in consequence of effusion or extravasation, the protruding part becomes crushed, and what comes out is a mixture of brain and different kinds of secreted matters, or effused blood. The foregoing cases explain a particular kind of protrusion, which seems to me to have been frequently described by authors, and of which they serve as specimens. Such occurrences cannot be observed without surprise ; the suddenness of the protrusion scarcely admits the supposition of the protruded part being organized. It was never meant by the recital of these cases to deny, that the surface of the brain, when exposed and irritated, would throw out a vascular fungus ; it was only intended to describe a species of those appearances which had been denominated fungus or hernia cerebri. In all the cases of true fungus cerebri which I had seen when I first wrote the foregoing account, the fungus grew so slowly that it could not be mistaken or confounded with the appearances which took place in the cases I have cited. Since that period, I have seen cases in which the fungus grew much more rapidly, yet none in that degree which would make it liable to be confounded with the appearances described in the present section. The curative indications in the true fungus cerebri seem to be, to diminish those causes which occasion the brain to be thrust upwards against the bone, and to apply gentle pressure from without, so as to give that degree of support which the part ought naturally to receive from the dura mater and bone.

SECTION IV.

Concussion of the Brain.

As I am of opinion that the effects of concussion have not been justly described by authors, and as the symptoms related by them are not, according to my experience, those which usually occur, I have therefore selected two cases out of a great number that I have seen, in order to show what have appeared to me the common consequences of this injury; and I shall afterward offer some remarks respecting the treatment of this affection.

CASE XVII.

Harriet Silverthorn, aged twenty-three years, slipped down stairs, and struck her occiput against some of the lower steps, by which the integuments were divided about half an inch in length, but the wound was not deep, nor were the surrounding parts much bruised. She was taken up senseless, was bled, and the next morning conveyed to St. Bartholomew's Hospital. When brought in, she was comatose; could not be made to answer any questions; yet she drew back her arm when pinched, and seemed very uneasy when the wounded parts were pressed upon. Her breathing was without stertor, but performed at some interval, as if she did not wish to inspire until obliged by necessity. The pulse, which was full, and labouring, intermitted every fourth or fifth stroke.—Eight ounces of blood were immediately taken away, and an opening medicine given, which procured three stools, after which she was ordered a mixture, containing aqua ammoniæ acetatæ, and antimonial wine.—The next day, (*Friday*,) she was rational, put out her tongue when desired, and said she had no pain in her head; her breathing was more regular, and her pulse free from intermission.—(*Saturday*,) she was still more sensible, and

gave some account of herself ; complaining now of head-ach, and general uneasiness. The mixture was continued, the purging medicine given again, and a blister laid on between her shoulders.—(*Sunday*,) her pulse was harder ; she was sensible, but restless ; complained of pain in her forehead, sat up in bed, and wanted to go home. Six or eight ounces of blood were taken from her temples, and the mixture ordered to be continued as before.—(*Monday*,) she was much more composed ; but as she had still some pain in her head, a blister was applied to it.—(*Tuesday*,) she had slept quietly during the night, answered rationally, but with quickness, and eagerly desired to go home. As the blisters appeared to have been serviceable, that on her neck was renewed.—(*Wednesday*,) she was perfectly quiet, and in every respect better ; nor had she, after this, any complaint worth mentioning.

CASE XVIII.

A Frenchman, twenty-seven years of age, who had been many years in England, and (as it afterward appeared) spoke our language perfectly, had met with some accident, (but in what manner, I know not,) in consequence of which he was brought to the hospital. He was then very comatose, and expressed much uneasiness at being roused from that state ; yet he put out his tongue when bid, but did not give rational answers to questions put to him, and his replies were made in his native language. His pulse was regular, strong, and about 96 in a minute. Ten ounces of blood were taken from his arm ; and after being purged, the common saline mixture, with antimonial powder, was ordered to be given. In the night he grew delirious, got out of bed, and tore the bandage from his arm ; in consequence of which he lost a good deal of blood before it was perceived. This, however, seemed of use to him ; for he became more tranquil after it, and lay quietly dozing till morning. Next day, he was more rational, and complained of pain in his head. When I told

him that if he kept quiet, he would soon be well, he said, he hoped so ; and appeared solicitous to know what should be done to him. His pulse was only 80, and not strong. A gentle laxative was given, and a blister applied to his head.—On the third day, he was much more sensible, spoke with clearness, and mentioned the pain being in the fore-part of his head ; yet, when I asked his age, he told me he was but sixteen years old.—*Tuesday*, (fourth day,) he appeared more excited and wild ; his tongue was dry, but his pulse only 75. Nine ounces of blood were taken from the temporal artery.—Fifth day, his pulse was only 70, and perfectly natural ; yet he had pulled off the dressing from his blisters, and seemed to be very irritable.—Sixth day, still pain in his forehead, pulse rather quicker, but tongue not furred. After this he gradually recovered, without any particular symptom occurring, and without any other medical treatment.

It is not likely that, in either of these cases, extravasation, at least to any considerable degree, had taken place within the head, since in neither of them was there stertor, dilatation of the pupils, or insensibility. They may therefore, I think, be considered as exhibiting the symptoms which attend simple concussion. The foregoing cases were indeed instances of but slight concussion to what the brain sometimes suffers, and which proves fatal. To display the symptoms which occur in the worst cases, I relate the following instance.

CASE XIX.

W. Thomas, about thirty years of age, fell from the top of a brewhouse, a height of at least 80 feet. His hand being stretched out, first sustained the shock, by which the carpal bones were separated, and driven upwards, some before, and others behind the ends of the radius and ulna, the articular surfaces and periosteum being at the same time forced off the latter bones. I mention these particulars to show the great violence of the fall. The man's head afterward struck

the ground as appeared by a bruise on his face ; but the cranium was not injured. When brought to the hospital he appeared almost deprived of life, his body being cold, and his pulse scarcely to be felt. The gentlemen then attending put his feet into warm water, and gave him an opiate.

After this he gradually became warmer, and it was observed that there was not much dilatation of the pupils, and but little stertor in respiration. I saw the patient next morning, at which time his skin was very hot, and he perspired copiously. His breathing was repeated at regular intervals, but the expirations were made with unusual force. The pulse was extremely irregular, both in frequency and in strength ; generally about 140 in a minute. His pupils were moderately contracted, his eyebrows drawn into a frown as if he suffered pain. When I spoke to him softly, he did not answer. I pinched his hand slightly, but he did not move : but when I repeated this a little harder, he drew it away with seeming vexation. He disliked that his eyes should be examined. When by speaking loud, I roused him, and inquired if his head ached, he answered, "Yes." I got him to swallow some opening medicine, which emptied his bowels ; and four leeches were applied to his temples ; but they extracted very little blood, and I thought his pulse countermanded any further evacuations.

In the afternoon he appeared better. His pulse was more regular, and his skin of a more natural temperature ; his pupils, however, were more contracted, and his sensibility increased. I tried the effect of giving him forty drops of tinct. opii. Thinking it might diminish sensibility, and keep him quiet for some time, during which the vascular system (which seemed to be particularly deranged) might perhaps regain its powers. The opiate increased his disposition to sleep, and he appeared to suffer less pain ; but in the evening his pulse was more feeble and frequent, and his skin hotter, and quite wet with perspiration. Wine was now given to him, but without any apparent benefit ; the powers and actions of life gradually diminished, and before morning he died.

On dissection there appeared every mark denoting violent inflammation of the brain and pia mater, of short duration. The minute arteries of the pia mater were turgid with blood; in many places there was the appearance called blood-shot, which was also to be seen in the lining of the ventricles. Dark-coloured, and, in some places, bloody, coagulable lymph filled all the recesses between the tunica arachnoidea and pia mater. On dividing the substance of the brain all its vessels appeared as if injected with blood.

I am inclined to believe that the medical treatment of this patient did him neither much good nor harm. The means employed seem to have acted on him as on a person in health. The opening medicine rendered him cooler, and quieted a little the disturbed actions of the system. The opiate made him more still, and disposed him to sleep.

I leave it to practitioners to consider, whether cordials would have been of any service in this case. Would they not rather, by stimulating the nervous system, have increased the disturbance of the sensorium, and, by exciting the heart and arteries, have tended to aggravate the inflammation of the brain.

I add another case, because it is remarkable for the violence of the subsequent inflammatory symptoms. The case was attended by Mr. Sheppard of Chew Magna, who was at the time it happened, dressing pupil to Sir Charles Blicke, at St. Bartholemew's Hospital. To his judicious and unremitting attention I cannot but attribute, in a great degree, the ultimate welfare of the patient. The account which I have drawn up, is taken from Mr. Sheppard's notes.

CASE XX.

David Davis, a robust man, thirty-five years of age, was admitted into St. Bartholemew's Hospital on the 21st of November, 1799. He had fallen from a considerable height on his head, and had bruised and wounded the scalp, but without fracturing the bone. He was, when brought to the hos-

pital, so far insensible, as not to be affected by slight impressions, and his extremities were cold. His feet were put into hot water, and, after some time, he became warm and more sensible, and the pupils of his eyes contracted as in common. Twelve ounces of blood were taken from the temporal artery, and a purging medicine given. On the following day, the pulse being full and hard, sixteen ounces more of blood were taken away, and the purging medicine repeated, which procured several stools, and a blister was also applied to the nape of the neck. Notwithstanding these measures, however, he became delirious, and his skin felt hot, and he complained of pain in his head. Twelve ounces more of blood were therefore taken, and three grains of pulvis antimonialis given every fourth hour.

November 24. The delirium still continued, but the patient lay more quiet : his pulse was 120, and full : therefore twelve ounces of blood were taken ; and as the delirium and strength of the pulse still continued, in the evening, the bleeding was repeated to the extent of twelve ounces. His bowels were also emptied by *magnesia vitriolata* and *senna*. Afterward he had thirty drops of *tinct. opii* given him at night. He slept some hours in the night, and next morning his pulse was less hard and only 96 in a minute ; his answers to questions were also much more rational, and delivered in a less loud and quick tone of voice than before. For during the greater part of the delirium he had been very unmanageable, rolling about in bed, and endeavouring to get up, and speaking in a loud and fierce manner. Toward the evening the symptoms again increased ; his pulse was 120, and harder and fuller than in the morning ; his skin was hot, and he complained of thirst. He had taken purging medicine in the morning, which had operated. Three grains of antimonial powder were now given every fourth hour, and his feet put into warm water, in hopes of procuring perspiration : ten ounces of blood were taken from the temporal artery, and the opiate repeated at night.

25th. The patient had slept during great part of the night :

his pulse 100 : he complained of cold, though his skin was hot ; and of great pain in his head. More stools were procured, and twelve ounces of blood were taken from the temporal artery. He now took six grains of pulv. ipecac. comp. every four hours.

26th. He had been delirious during the former part of the night, but had slept toward the morning ; in other respects he was much as before. In the evening, as his pulse would bear it, twelve ounces of blood were again taken away.

27th. Pulse softer and frequent. He had three stools from medicine in the evening. The delirium seemed to have a little subsided, and he was much inclined to sleep, so that it was difficult to obtain an answer from him.

28th. A blister was applied to his head, and in the evening, his pulse becoming full, ten ounces of blood were taken from him. Two grains of opium were given him at night.

29th. He had slept well, but complained of his head, and of difficulty in swallowing, and in the evening had hemiplegia of the right side of his body.

30th. He had slept but little, the bowels lax, the pulse small and frequent, the hemiplegia continues.

We had thus far been endeavouring, by the most powerful means, to subdue a violent inflammation of the brain, and could scarcely be said to have accomplished our design, when a new affection called for attention. I think it can scarcely be doubted, that the hemiplegia was the effect of pressure made by an effusion of fluids, in consequence of inflammation, operating probably chiefly on the left hemisphere of the brain, so as to paralyze the opposite side of the body. Under this persuasion, and without expectation of success, I directed that two drachms, by measure, of strong mercurial ointment should be rubbed in on his arms and legs night and morning, and that five grains of the pil. hydrarg. with one grain of opium should be given three times a day. These means were continued for three days without any striking amendment being perceived, but on the fourth (Dec. 4.) he stretched out his right arm when required, and he was

able to swallow without difficulty. As he was getting better, the same plan was persevered in till the 9th, when the mercury had affected his mouth, and produced a diarrhœa. He now knew all those persons who attended him, and his state was surprisingly altered. During the inflammation of the brain he had been very unmanageable, and his replies and expressions were fierce and loud. Now he was extremely tractable, and wept whenever he was spoken to. His pulse was very feeble, and beat but 90 in a minute. It seems right to mention, that a few days afterward, when he was slowly recovering, one of the wounds of the temporal artery gave way, and he lost perhaps fourteen ounces of blood before it was perceived. This circumstance of course made him weaker, and increased the frequency of his pulse, but it did not much impede his recovery, which, though very slow, was very perfect. Extensive sloughing of the integuments of the nates had taken place, which it does not seem requisite to mention, but inasmuch as it tends to show the reduced state to which he had been brought. Indeed, if this patient had not possessed a vigorous constitution, it seemed scarcely possible that he could have survived the debility which this disease and the treatment conjointly produced.

The extent of the evacuations, that surgeons are obliged to make in inflammations of vital organs, is such, as would deter the inexperienced from pursuing them, and must astonish those who have employed them with success, that they could be borne with so little apparent injury. It can only be accounted for by considering the disease as the stimulus which keeps up the actions of the constitution under such exhausting measures, as would occasion them to sink but for this excitement.

The opinions that prevail among surgeons respecting the treatment of concussion, are very different. Many late writers advise stimulating cordials, such as wine, and volatile alkali, to be given; while others pursue a directly opposite conduct. Nor do they agree in the account of the symptoms, which they consider as depending on this species of

injury. Most writers represent the subject, as if the deranged state of the brain, which is the immediate consequence of the shock, continued to the termination of the patient's illness or of life; while, in the cases given by Mr. Pott, the symptoms appear to proceed more from the inflammation which ensues, than from the concussion.

The whole train of symptoms following a concussion of the brain, may, I think, be properly divided into three stages. The *first* is that state of insensibility and derangement of the bodily powers, which immediately succeed the accident. While it lasts, the patient scarcely feels any injury that may be inflicted on him. His breathing is difficult, but in general without stertor; his pulse intermitting, and his extremities cold. But such a state cannot last long; it goes off gradually, and is succeeded by another, which I consider as the *second* stage of concussion. In this, the pulse and respiration become better, and though not regularly performed, are sufficient to maintain life, and to diffuse warmth over the extreme parts of the body. The feeling of the patient is now so far restored, that he is sensible if his skin be pinched; but he lies stupid, and inattentive to slight external impressions. As the effects of concussion diminish, he becomes capable of replying to questions put to him in a loud tone of voice, especially when they refer to his chief suffering at the time, as pain in the head, &c.; otherwise, he answers incoherently, and as if his attention could not be excited, or was occupied by something else; he is, in short, like a man in a heavy sleep. The concussion of the brain, lastly, produces a state of inflammation of the organ, and this constitutes the *third* stage, which is the most important of the series of effects proceeding from this cause.

These several stages vary considerably in their degree and duration; but more or less of each will be found to take place in every instance where the brain has been violently shaken. Whether they bear any certain proportion to each other or not, I do not know. Indeed this will depend upon such a variety of circumstances in the constitution, the in-

jury, and the after-treatment, that it must be difficult to determine.

With regard to the treatment of concussion, it would appear, that in the first stage very little can be done. From a loose, and, I think, a fallacious analogy between the insensibility in fainting, and that which occurs in concussion, the more powerful stimulants, such as wine, brandy, and volatile alkali, are commonly had recourse to, as soon as the patient can be made to swallow. The same reasoning which led to the employment of these remedies in the first stage, in order to recall sensibility, has given a kind of sanction to their repetition in the second, with a view to continue and increase it.

But here the practice becomes more evidently pernicious. The circumstance of the brain having so far recovered its powers, as to carry on the animal functions in a degree sufficient to maintain life, is surely a strong argument that it will continue to do so, without the aid of such means ; which tend to exhaust parts already weakened, by the violent action they induce.

It seems probable that these stimulating liquors will aggravate that inflammation which must ensue sooner or later. The access of it, in the cases which I have related, is sufficiently evident ; and its cure is to be effected by the common methods. The great benefit of evacuations was, in those cases, very evident. Indeed, it appears to me, that there is no complaint which requires such means to be more rigorously prosecuted, than an inflammation of the brain or its membranes.

In addition to the reasoning which I have offered here, I would observe, that surgical books abound with cases in which suitable evacuations have been freely employed in concussion, with the best effects ; while the advocates for a contrary practice have rested their arguments upon vague theory, and communicate no particulars of their success.

If the foregoing cases exhibit the genuine marks of concussion, the administration of cordial medicines, which has

been so much recommended, appears to be very ill adapted to the relief of such an injury.

I have seen so many additional cases of concussion, so exactly corresponding to those formerly related, that I am more fully satisfied of the truth of the representation which has been given of them. I have in consequence been led more and more to wonder, that a contrary plan of treatment to that which has been so uniformly successful, could ever have been recommended, and to conjecture what cases could have occurred, in which such opposite practice must not have been strikingly prejudicial. Probably I may point out such cases ; and as I do not find them described in books of surgery, because they have not been deemed sufficiently important, it may not be improper briefly to mention them.

A young lady was stooping in a closet, and rising up suddenly and forcibly, she struck her head against a shelf. The blow occasioned extreme pain, but did not stun her. She went down stairs without mentioning the accident, and, after sitting with her friends for a short time, she fainted. As it was in the evening, she went to bed, but could not sleep for pain in her head, and the next day her pulse was very languid, and her extremities cold ; she complained of great pain when the scalp was slightly touched, and said there was a sensation as if cold water was dropping on it. She took some gentle opening medicine, which relieved these symptoms, but she could not sit up for many days, and it was a considerable time before she recovered from the languor, which the blow had occasioned : but neither fever, nor failure of sensation, or of intellect, took place in the slightest degree. I have seen many similar cases, and in one the patient said his sensations were such as would induce him to believe that his brain was loose, and moving on the inside of the skull. All these cases were relieved by slight evacuations, as gently opening medicines, leeches, or cupping, though I am inclined to believe that a contrary plan of treatment, which has been recommended in concussion, might have been pursued without material detriment. Cases of this description

are to be considered as arising from nervous symptoms, attendant upon slight injuries, rather than as effects of serious concussion.

In nervous patients, cases of actual concussion, to a degree that occasions insensibility, are frequently followed by nervous pains in the head, which evacuations from the system do not relieve, or but for a short time ; and the permanent feebleness which they induce greatly aggravates the disordered state of health which existed prior to the accident. Of this I shall also mention one instance, in order to excite the reader's attention to the subject. A young lady went out of London for the improvement of her health. She being unable to walk from a kind of rheumatic affection of her ankle, when in the country she was accustomed to take exercise by riding out in a gig, which was one day upset, and the patient was thrown out with a force that completely stunned her. When the insensibility had subsided, an intelligent surgeon in the neighbourhood bled the patient, and prescribed aperient medicines. While the disposition to coma still remained, the patient complained of tormenting pains in the head, for which she was repeatedly bled, and with temporary relief to her sufferings. On the fifth day after the accident she was unable to distinguish objects, and shortly afterward declared that she was totally blind. This occurrence induced her friends to request me to visit her ; and as it appeared that the paralysis of the optic nerves was not the result of any immediate injury produced by the accident, as it occurred after a series of depletion, which was likely to prevent any effusion from taking place, I recommended that the case should be treated as one of nervous blindness, by paying the strictest attention to those means which are calculated to ensure the performance of the respective functions of all the organs concerned in the digestive processes, according to the plan suggested in the first part of these observations, and by the use of medicines which have a stimulating effect upon the stomach, and which are known from experience beneficially to excite the nervous system. Under

this treatment the patient gradually, and even speedily regained her sight and health. It seems proper further to add, that every violent concussion of the brain is followed by a state of weakness or disorder of the nervous functions of that organ, which, as in all other cases, occasions a corresponding disorder of the digestive organs, which latter malady must maintain, and may aggravate the former.

Mr. Pott, in speaking of concussion, says, that he never knew patients recover from the immediate consequences of it, without an imperfection in some sense, or part of the body, remaining. The result of my own experience has been very different; and yet I am ready to believe that such events may not unfrequently take place, as I know from examination, that the substance of the brain is sometimes lacerated and disorganized in violent concussions. I have, however, examined other cases of fatal concussions, without observing any such lesion of the substance of the brain.

It has hitherto been considered as a desirable object, to point out any marks by which we might distinguish between compression and concussion of the brain; but I believe no such criteria have yet been communicated to the public. If we judge of the symptoms of compression from what occurs in cases of apoplexy, or from cases like those which have been related of the rupture of the middle artery of the dura mater, (in one of which cases it was evident, that concussions had no share in producing the symptoms,) we must, I think, be of opinion, that pressure on the brain occasions insensibility, partially, or generally, and in a degree proportionate to its quantity. In extreme cases, such as I have cited, the insensibility is manifested by every circumstance. The pupil of the eye is dilated, and cannot be made to contract even by a strong light. The respiration is slow and stertorous, and the pulse proportionately slow and labouring. There is no vomiting, which would indeed indicate sensibility of stomach. The limbs are relaxed, as in a person just dead. No struggles take place, nor signs of sensation appear during the operation; but on the pressure being removed, sensation

and intelligence are immediately restored. In concussion, the insensible state is of short duration, and during its continuance the body is generally cold, and the pulse feeble and intermitting. Afterward the skin is hotter than usual, the pulse and respiration more frequent; the former often intermits, and the latter has not the stertor of apoplexy.* The pupil of the eye is not dilated, but rather contracted. The countenance expresses pain or uneasiness; and vomiting occasionally takes place. The state of the patient is like that of a heavy and uncomfortable sleep; yet, being roused, signs of intelligence appear.

In fractures of the basis of the skull, however, it must be acknowledged, that the symptoms are often deceptive. In general the symptoms resemble those of concussion, yet sometimes a degree of insensibility may be observed like that produced by pressure, when no pressure has really taken place.

I cannot better represent to the reader what I conceive of the value of the distinctions which I have made, between the symptoms of compression and concussion of the brain, in ordinary cases, than by relating briefly some of the particulars of a case sent me by Mr. Davies, surgeon of Tetbury, who was formerly an industrious and intelligent student at St. Bartholomew's hospital. The case, also, in my opinion, deserves to be recorded for other reasons, which I shall afterward mention.

A young woman was knocked down by a blow on her head, and the place where the blow had been received was denoted by a soft swelling of the scalp. She lay in a state of apoplexy, and appeared like a corpse. The pupils of her eyes could not be made to contract by the approach of a strong light; her olfactory nerves were unaffected by the

* But the absence of stertor must not be relied on as a proof that there is no compression; for Morgagni relates dissections of apoplectic persons, where the effusion was considerable, yet no stertor had occurred; and I have seen cases where it took place only in a very slight degree.

most pungent odour; her ears were equally insensible to sound; she manifested no uneasiness upon being sharply pinched; her pulse was small and intermitting, and her breathing scarcely perceptible; and a cold and clammy moisture covered her skin.

Mr. Davies immediately divided the scalp, and finding the bone fractured, he trephined it. There was no blood upon the dura mater, but that membrane was thrust up into the aperture made by the trephine. The dura mater being divided, about five ounces of blood was suddenly discharged, and the patient rose up in bed, as if waking with affright. Her pulse and respiration were soon relieved, and became natural. A plan of treatment calculated to prevent and subdue inflammation was strictly pursued, and the patient did well without any remarkable occurrence taking place.

From what has been already said it may be inferred, that I do not consider the division of the dura mater as a slight evil. It is, doubtless, the duty of a surgeon, when he has been urged to trephine, on account of strong symptoms of pressure, to divide that membrane, if it be thrust upward into the aperture which he has made. I have said that frequently the blood is coagulated, or so thickly grumous, that the whole of it cannot be discharged. In the present case, however, the promptitude of the surgeon's conduct enabled him happily to discharge the effused blood while it remained fluid.

SECTION V.

*Inflammation of the Pia Mater.**

THE inflammation of the dura mater, which occasionally succeeds to injuries of the head, has been well described by Mr. Pott. Patients labouring under this complaint are feverish, have a constrictive pain in the head, but continue rational, and give a clear account of their symptoms, until matter forms, or inflammation of the internal parts ensues. This is what we might naturally expect from the structure of the dura mater, the manner in which it is supplied with blood, and its vessels having little connexion with the brain. When the pia mater becomes inflamed, as the brain derives a considerable portion of its blood through the vessels of that membrane, the disease is instantly communicated to the cerebrum, and deranges its functions. This derangement varies in its nature and degree, accordingly as the inflammation of the pia mater is more or less violent; as it is confined to the surface, or extends to the internal parts; as it produces a greater or smaller secretion of fluid which compresses the brain; or as it is more or less blended with the effects of concussion. The state of the patient will vary considerably under these different circumstances. If the inflammation be violent and general, the patient will be irrational and disturbed, having his mind strongly affected by wrong ideas,

* In the first edition, I related in this section cases of inflammation of the pia mater, in which this disease occurred distinctly, and terminated fatally, in order to authenticate the specific symptoms attendant on it. As many of the foregoing cases, however, are instances of this disease coming on after concussion or fracture, and yet occurring as a distinct disease, and uncombined with symptoms arising from the peculiar nature of the injury, I think a further narrative of cases superfluous.

and endeavouring to act in consequence of them. If the inflammation be moderate, and affect the surface only, he will be irrational, uneasy, restless, and perhaps endeavour to get out of bed, but without the violence of mania. Should a moderate inflammation be blended with the effects of concussion, he will have less appearance of irrationality, will lie pretty quiet, and inattentive to slight impressions, as appeared in some of the cases related.—I am not able to particularize every variety that may occur in the symptoms; but in all, there must be more or less derangement of the powers, both mental and corporeal, depending upon the degree of inflammation, &c.*—The symptoms, which chiefly characterize the complaint, are those of an increase of sensibility; the pupils of the eyes are contracted; the patient often withdraws his arm on being touched, and his pulse and tongue denote general as well as local inflammation. It seems of the utmost importance, that those means which in general cure inflammation, should be prosecuted very vigorously at the commencement of this complaint; since otherwise, although they may check, they will not overcome it. Large blood-lettings, brisk purging, and extensive counter-irritation by blisters, ought to be employed at the very commencement; for, if omitted, the disease will then become established, and the powers of the body will soon be too much sunk to admit of the same active treatment at a later period.

I have here represented the general effects of inflammation of the pia mater when it arises from external violence. In other cases, indeed, where it comes on, as it were, spontaneously, or without any powerfully exciting cause, (in which case it generally falls under the care of the physician,) it has appeared to have affected the brain but little, and to have been very slow in its progress, and inactive in its na-

* An unusual infirmity of the bodily powers is sometimes observed, accompanied with tremors, low delirium, and exceedingly rapid pulse; yet, on dissection, a slight inflammatory appearance of the pia mater and brain is all that can be discovered. Such a state sometimes occurs after an abscess has formed in the brain.

ture. In such cases it has produced a deposition between the tunica arachnoidea and the pia mater, or a collection of serum between the former membrane and the dura mater. Under these circumstances, I have learned that the rationality of the patient has been scarcely deranged. And as such a state of disease may occur after an accident, I have thought it right to mention it in this place.

In the generality of cases of injury done to the head, the symptoms of concussion, compression, and inflammation, are so combined as to appear inexplicable. It is only by an attention to those rare cases, in which the symptoms of each appear distinctly, that we are likely to increase our knowledge of their specific effects. I conclude this review of the effect of injuries done to the head, by observing, that whatever may be the nature of the injury which the brain may have sustained, still the disorder induced in that organ must produce a proportionate disorder in the functions of the digestive organs, and the re-action of the latter affection must aggravate the former. Some remarks on this subject are inserted in the first part of these observations. To corroborate further the statement there given, and to bring this subject before the reader's mind on the present occasion, I relate the following case, which occurred some years ago.

CASE XXI.

A young gentleman received a severe wound on the forehead, which laid bare the bone, and stunned him. By venæ-section and the usual treatment, the immediate ill consequences of the injury were mitigated and subdued; so that the wound healed, and he was considered to be convalescent. He was not however, well; he had strange nervous feelings about his head; and after three months he became very much disordered. Calling at a friend's house, he discoursed wildly and became so delirious, that they were obliged to

confine him in bed by means of a strait waistcoat. Ten ounces of blood were taken from him, and I was desired to visit him. His pulse beat more than 100 in a minute ; his skin was hot and dry ; his tongue was furred, but it could not be distinctly seen ; he showed no signs of understanding to any questions that were put to him ; he rolled his head about, and breathed altogether by means of the ribs, without moving the diaphragm. When I pressed even slightly beneath the ensiform cartilage, he seemed to suffer greatly, and became slightly convulsed. The blood which had been taken from the arm did not indicate inflammation, and I was therefore induced to consider the symptoms as arising from nervous irritation, caused, or aggravated, by disorder of the digestive organs. As it was impossible to get the patient to swallow, we formed two grains of calomel and 10 of jalap into an electuary, by means of a little honey, and besmeared the back part of the tongue with it. The same medicine was repeated after six hours. The second dose produced two copious discharges from the bowels, after which his head was so much relieved, that when I called on him the following morning, he was perfectly rational, and his pulse was tranquil. I then questioned him particularly respecting the kind of pain in his head ; and he told me that it was not severe, nor accompanied with throbbing ; that it was confined to the part which had been wounded, and it was constant. As the purgative medicines had not begun to operate till towards the morning, I thought that their effects might continue, and therefore only advised that he should take saline draughts in a state of effervescence, during the day ; and food of an unstimulating quality. No more evacuations, however, took place from the bowels, and in the afternoon the patient again became delirious, so that when I saw him in the evening he did not seem to understand any thing that was said to him. He lay, however, much more quietly than he had done on the preceding evening, only occasionally moving his head to one side or the other, and then seeming as if he was looking for some object by the side of the bed. The

jalap was now again given him, with the addition of one grain of calomel. The medicine operated twice in the night, and next morning he was again perfectly rational. We now ensured the continuance of discharges from the bowels, by directing him to take some common purging mixtures, if his bowels did not act in six hours. The delirium did not return, and the patient soon became as well as he had ever been since the accident. Yet still his digestive organs were not in a healthy state. His tongue was much furred ; his bowels either costive or purged, and generally in the latter state ; and the secretion of bile was either deficient in quantity, or faulty in quality. He remained in this way for many months, though various kinds of medicines were given for his relief. At last a spontaneous diarrhoea occurred, and, as I was informed by his physician, his bowels afterward regained their natural tranquillity and functions, and his health was perfectly restored.

SECTION VI.

Cases of Disease of the Bone and Dura Mater.

THE diseases of the cranium, and consequent affections of the dura mater, have been well described by some French and German surgeons.* But as they have not, I believe, been explained by English writers, I shall confirm the accounts which we have received of them by additional cases; and afterward shall offer some remarks on this subject.

CASE XXII.

A man, between thirty and forty years of age, was salivated for complaints in his head, supposed to be venereal. There were two tumours of the scalp; one a little before the coronal suture, and the other a little above the posterior superior angle of the left parietal bone. The man's health was greatly reduced by the course of medicine he had undergone, as well as by the disease, which had considerably increased during the use of mercury. The integuments covering the posterior tumour had ulcerated; and a probe could be passed under them, so as to discover a considerable extent of bare and carious bone. The surgeon, under whose care he was admitted into the hospital, divided the integuments, and perforated the diseased bone, which was found separated from the dura mater. That membrane also had a very morbid appearance, being covered with a soft substance of a dirty reddish colour. On pressing down the

* Vide Mons. Louis's Memoire, in the fifth volume of the Mem. de l'Acad. de Chirurgie, and Haller's Disputationes Chirurgicæ.

dura mater with a probe, to see if it was detached to any extent, nearly a table-spoonful of healthy pus issued from beneath the bone, about an inch behind the part perforated. The surgeon thought this might be sufficient to relieve, and therefore deferred making another perforation. But the man, who had lain stupid, though not irrational, and had subsultus tendinum accompanied with great debility, grew shortly after delirious; in which state he continued about two days, when he became convulsed, and died.

On dissection, purulent matter was found on the dura mater, beneath both the carious portions of bone. The membrane also, which was detached, was much thickened, so as in some degree to indent the surface of the brain. The pia mater was generally inflamed; and a larger quantity of fluid than usual was found in the ventricles.

CASE XXIII.

An old man was admitted into the hospital for a complaint of giddiness and pain in his head. Upon examination, a tumour was perceived over the left parietal bone, into which an incision was made, and a good deal of matter discharged. The pericranium was found to be detached for three inches in length, and two in breadth. In the middle of the bare bone, which seemed to be dead, and really was so, granulations of a healthy appearance had sprouted out. These arose from the dura mater, and had made their way through the bone. The patient's health, which was moderately good at the time of his admission into the hospital, gradually declined; and, after about six weeks, the pain in his head became particularly severe. From this time he became gradually comatose, took no food, and soon died.

On dissection, the dura mater, beneath the carious bone, was found detached, and had granulated. Much pus lay between the left hemisphere of the brain and the falx; and the whole of the dura mater covering the right hemisphere

was lined with healthy pus, which adhered to its surface, and appeared to have been secreted by that membrane.

The cases of diseased bone, which require perforation of the cranium, have not been sufficiently treated of by any English writer. Mr. Pott has, indeed, noticed the disease and death of portions of the skull, that succeed to contusions; but he has not sufficiently explained the affections of the membranes of the brain, which even these diseases sometimes occasion. The circumstance, which seems particularly to have attracted his attention, is the inflammation and suppuration in the diploë, which proceed from injury done to the bone. The existence of that complaint, however, is easily known; for while there is a fixed pain in that part of the bone, there is no general inflammation, or but very little, of the dura mater. The disease continues, too, a much longer time without producing any seriously bad symptoms, than any disorder of the internal parts could do. When matter is formed in the diploë, the pericranium will certainly separate from the bone, and the external table of the skull will undoubtedly perish. In a case so clearly marked, the conduct to be pursued is obvious, which is, to remove a portion of the external table with the trephine, so as to discharge the matter collected in the diploë, without which no relief can be obtained. I have seen in several cases where the operation was performed early, that the external table came away within the circle of the trephine, the matter was discharged from the medullary part of the bone, and the internal table remained sound and entire, covering the dura mater. Granulations soon arose, and the patients got well, with the exfoliation only of a portion of the outer table. The mischievous consequences of delaying the operation, when once the disease is known, must be evident; for the matter collected within the bone, having no natural outlet, will press on every side, first gradually destroying the diploë, sometimes extending itself over almost the whole of the cranium, and at last occasioning the partial absorption of both tables.

so that the skull after death shall be found perforated with a number of holes, like a piece of worm-eaten wood. These holes afford a discharge to the matter, which not only oozes out beneath the pericranium, but also insinuates itself between the skull and dura mater; till at length the patient sinks, worn out by the irritation and fever which this painful and extensive disease creates; unless, as it sometimes happens, he is previously destroyed by inflammation attacking the membranes of the brain.

Suppuration of the diploë, and the death of a portion of the bone, are the common effects of injury done to the cranium; and such a morbid state may indeed occur at some distance of time from the receipt of the injury. But the disease, which the cases represent, generally arises without an obvious cause. An affection of the dura mater is almost the necessary consequence of such a disease in the bone. In syphilis it probably takes place later than in any other instance; for that disorder attacks the outside of the skull, which it gradually destroys; the inner table and the dura mater remain sound until the last. But when, as in the complaint I am now considering, the whole bone is involved in disease, we can no more expect that the dura mater should remain unaffected within, than that the pericranium should continue sound and attached without; for that membrane may be regarded as the periosteum to the internal table of the skull. It is well known that, in general, the dura mater separates, and becomes thickened from a deposition and subsequent organization of coagulable lymph between its layers. This thickening is sometimes considerable, so as to form a tumour which causes an indentation in the cerebrum; as happened in a very remarkable degree in the case of the *Sieur le Gallois*, related by *M. Louis*.* Sometimes the dura mater secretes pus, which being confined within the cranium, produces inflammation of the brain, &c. At others, granula-

* See *Mem. de l'Acad. de Chirurg.* tom. v. It also took place more slightly in one of the cases which I have related.

tions arise from the irritated membrane, and, making their way through the bone, form those tumours so well described in the Memoir just referred to. This took place in one of the cases I have related; and is a remarkable instance of the power which granulations possess of removing bone. The disease, however, does not confine itself to the part first attacked; for if the irritated state of the dura mater be not appeased, thickenings will take place in other parts of that membrane; or the inflammation becoming more extended, suppuration may be produced even over the opposite hemisphere of the brain, as happened in both the cases which I have related.

I do not mean to say, that in every case of diseased cranium, even where both tables of the skull are equally affected, the perforation of the bone is indispensably required. I know it often happens that the bone exfoliates, without any bad effects having been produced.

But surely no surgeon, who perceives the danger of delay, would hesitate to remove all the dead portion of bone, if symptoms denoting general irritation of the dura mater take place. The best event that can be expected, is, that the bone will at length exfoliate without much pain to the patient, or injury to his constitution. By removing the dead bone, and giving an early and free discharge to any matter collected beneath it, the irritation which it occasioned will be taken away, the diseased state of the dura mater will gradually subside, and healthy granulations arise from its surface; nor will any further disease occur in other parts of that membrane. M. Louis tells us, at the conclusion of the Memoir already quoted, in what manner experience had taught him to treat fungi of the dura mater. He says that "the whole of the tumour should be exposed, which cannot happen till the bony circle, which conceals its basis, is removed; and that afterward means should be employed to destroy the fleshy excrescence."* Although the destruction

* The excellent advantages of such bold but judicious practice are well shown in a case related in the 9th Paper of Haller's *Disputationes Chirurgicae*, vol. i.

of the fungus might be proper for the sake of expedition, and although it can perhaps be attended with no harm, by whatever means effected, yet it may not be necessary. Like other animal fungi, it will probably cease to grow, and soon disappear, when the irritation which occasioned it has been removed.

In cases of tumours rising from within the skull, it is of consequence to determine from what part they proceed. In general, they will be found to spring from the dura mater, and to be the effect of disease in that membrane, induced and kept up by irritation. Surgeons have endeavoured either to reduce them by caustic, to restrain them by pressure, or to take them off by a ligature or the knife; and the excrescences have either ceased or continued to grow, according as the irritation which gave rise to them has been removed or not. If the former happened, the surgeon has sometimes attributed undeserved merit to the means he had employed for the cure.

Those tumours which come from within the dura mater may possibly differ in their kind in different diseases; and of these I have spoken in a former part of this Essay.

What I have written must appear very defective, if it be considered as regarding the effects of injuries of the head in general. But my intention has been only to endeavour to illustrate particular points of practice, by a relation of cases selected from a considerable number of each kind.

I shall next relate a case, in which, though the brain was not the immediate subject of the injury, yet it became affected in consequence of it, and I think the case deserves to be recorded, not only on account of several useful facts and hints relative to practice which it affords, but also because it may eventually tend to throw light on the economy and diseases of the brain.

in which a piece of diseased bone, six inches and a half in circumference, was removed

CASE XXIV.

A man was gored in the neck by a cow. The horn entered by the left side of the cricoid cartilage, and penetrated as far as the vertebræ; it then passed upwards on the bodies of those bones, nearly as high as the bottom of the skull; afterward it came out behind the angle of the jaw, exposing, and in some degree injuring, the parotid gland in its passage, and lacerating the skin of the face as high as the middle of the ear. In its course it had passed beneath, and torn the internal carotid artery, and all the primary branches in front of the external carotid artery. The former vessel was not, however, entirely rent asunder, so that the general course of the artery, and its connexion with the cranium, remained in the usual state. Notwithstanding the size of the vessels which had been torn, they did not immediately bleed; the wound was therefore closed and bound up. The blood was soon observed to flow in streams down the neck, nor could any general pressure upon the wound prevent hæmorrhage. In this state the man was conveyed to St. Bartholomew's Hospital, but he had lost a large quantity of blood before his arrival.

The patient was laid upon a bed, and before the wound was opened, one of the students firmly compressed the trunk of the carotid artery against the lower cervical vertebræ. We found upon the first inspection of the wound, that this pressure prevented any hæmorrhage; yet upon the occasional motions of the patient, and upon accidental variations in the pressure made on the vessel, the blood gushed from the bottom of the wound so suddenly, and in such quantities, as to prevent any accurate examination. The man was very uneasy; he complained much of the pressure, and was greatly distressed by a sensation of suffocation, which compelled him constantly to attempt to expectorate. Under these circumstances our first endeavours were to tie the

more superficial arteries ; but the edges of the wound being lacerated, the first ligatures which we endeavoured to make tore away portions of the flesh, and did not secure the vessels.

The situation of the patient became every moment more desperate : he really seemed choking, his extremities became cold, and his pulse was scarcely to be felt : his struggles also, which could not be controlled, made the pressure on the trunk of the artery very precarious. It was deemed necessary to enlarge the wound to get at the trunk of the carotid artery, and an incision was made between that vessel and the trachea, in a direction parallel to each of these parts. I had now the power of passing my finger beneath the trunk of the carotid artery, and of effectually compressing it between that finger and my thumb, which was placed opposite to it, upon the integuments of the neck.

I had now leisure to examine the wound with my other hand, and felt that the pharynx had been separated from the vertebræ of the neck, and had fallen against the larynx : the irritation of the latter organ was probably the cause of the sensation of suffocation which the patient suffered. There did not appear any reason to believe that the pharynx was wounded ; for though the patient was constantly spitting, the mucus was not mixed with blood. Finding that the moment I remitted the pressure of the carotid, the blood gushed out from so many orifices, and in such a torrent from the bottom of the wound, I resolved to pass a ligature round the trunk of the carotid at the part where I had been compressing it, and which was about an inch below its division. This ligature I thought might be made to serve as the tourniquet in amputation, for I could with it compress the artery so as to prevent the wounded parts becoming obscured by blood, and by slackening it I might gain information with regard to the situation of the ruptured vessels.

Should it become necessary at any time to tie the carotid artery, I am convinced that it may be done without much difficulty or danger, even without an accurate dissection of the part. If the incision be made on that side of the artery

which is next the trachea, where no important parts can be injured, as was done in the present instance, the finger can then be passed behind the artery, so as to compress it. The vessel being sufficiently bulky and firm, to make its form and outline distinctly perceptible, a needle may then be passed behind the artery, as near as possible to that edge of it which is next to the internal jugular vein: there can be little risk of wounding that vessel, or of including in the ligature the 8th pair of nerves which lies between them. In attempting to secure the carotid artery, I passed behind it, in the manner described, a blunt hook with an eye in the point, and having previously introduced a ligature into it, I drew back the instrument, and thus enclosed the artery.

When I compressed the vessel by tightening the knot of the ligature, I did it slowly, and with a watchful attention to the sufferings of the patient; for I cannot but suppose that had the nerve of the 8th pair been included, his complaints would have sufficiently denoted that circumstance. But the compression of the ligature did not seem to make the least difference in the general state of the patient, while it completely prevented the further effusion of blood. With a knife and dissecting forceps I then exposed the lacerated vessels, and found that the primary branches of the external carotid artery had been torn off from the trunk. By drawing upward the ligature which encircled the trunk of the artery, I made the internal carotid tense, so that its course and ruptured state could be distinctly felt. The ligature on the trunk was slackened, and the gush of blood further confirmed the laceration of the internal carotid artery. I had now the alternative of securing the ligature, which I had already made on the trunk of the vessel, or of tying the branches separately. I preferred the former, and it should be observed, that the man had now lain ten minutes or more, without any blood being carried to the brain by the left carotid; and during that period he had recovered from his extreme faintness, appeared perfectly sensible, and as well as could be expected, considering that the person had lost so large a quantity of blood.

The ligature being now made secure, the wound was brought together by strips of plaster ; and in this state warm milk was given to the patient to drink in order to learn what would be the effect of his efforts to swallow, and to ascertain, as far as possible, whether there was any wound in the pharynx or œsophagus. The patient swallowed about a quarter of a pint of this fluid with difficulty, and with the frequent excitement of coughing. No milk however came through the wound, and I concluded that all the difficulty of deglutition arose from the unnatural state in which the muscles of the pharynx were placed, in consequence of their detachment from the vertebræ. These circumstances happened between 4 and 5 o'clock in the afternoon, and when I saw the patient again between 9 and 10, his state seemed greatly amended. He had several times taken warm milk, and the difficulty of deglutition had abated. His pulse was now moderately full and strong, and not very frequent. It therefore appeared, that the apparently dying state of the man, which at one time had alarmed us, proceeded rather from the sudden discharge of blood, than from the quantity, however considerable, which had been lost. The patient also appeared tranquil, and perfectly rational, and though prevented from speaking much, he expressed himself satisfied in this situation.

On the whole, I was led to form a favourable expectation of the progress of the case, as far as related to the effects which a ligature on one carotid would have on the economy of the brain. I was next morning mortified to learn, that the patient had been unquiet and feverish during the night, that he had become delirious ; that he had been several times affected by slight convulsions, which had increased ; and that when liquids were now given to him, they passed through the wound, and he could scarcely swallow any thing. The pulse of the patient was now about 130 in a minute, and hard, and his skin was hot. He lay inattentive to external objects, but probably not insensible, for the pupils of his eyes were contracted ; and when the lids were opened in order to examine them, he shut them quickly, and, as it were, impatiently. It

had been remarked, that the left side of the body was more convulsed than the right.

As we had it not in our power easily to give medicine, I introduced a small hollow bougie through the right nostril into the œsophagus, and immediately injected half a pint of milk and water, and 60 drops of tincture of opium, that I might learn the effects of that medicine under the present circumstances. The patient shortly after broke out into a most profuse sweat, and the convulsions were quieted by the opium. The convulsions, when thus mitigated by opium, might be described as violent tremors of the left side of his body, but the right side remained motionless; to which curious fact I particularly attended. I placed his right arm across his breast, from which situation it did not afterward stir. I could not, however, perceive any distortion of the face to the opposite side, and the pupils of both eyes were equally contracted. When I saw the sweat break out on the taking of opium, and the nervous irritation diminish by its operation, I was then more forcibly struck than I had been before with the similarity of this patient's situation to that of a person suffering from the effects of concussion of the brain, some time after the accident, when the inflammation often succeeding to it had begun to take place.

I even questioned if it might not be right to take blood from the temporal artery which was seen beating violently. I thought, however, the general opinion would be against such practice, and I only applied a blister to the head. Twenty drops of tincture of opium were directed to be given to the patient every third or fourth hour, with a view to mitigate the convulsions, which it appeared to do. Milk and water was also occasionally given in proportion to the degree of perspiration. No remarkable change of symptoms took place, but the strength of the pulse gradually declined; and at 10 o'clock at night he had a severe convulsion fit, and immediately after died. His death happened about thirty hours after the ligature had been made on the carotid artery.

The body was examined on the following day. The brain appeared to have suffered a considerable degree of inflammation. The vessels of the pia mater appeared as if they were injected; and in many places upon the surface of the convolutions of the cerebrum there even seemed an effusion of blood, producing that appearance usually termed bloodshot. There was a very considerable deposition of gelatinous substance between the tunica arachnoidea and the pia mater. The vessels passing through the substance of the brain, though fuller than common, were not particularly turgid. A considerable quantity of water of a light brown colour, and slightly turbid appearance, was found in the ventricles, while the firmness of the sides of those cavities sufficiently indicated that the collection had not preceded the accident. On examining the neck, the carotid artery was found to be the only part included in the ligature. The superior thyroideal, lingual, and facial branches of the external carotid, were torn off from the trunk, and the internal carotid was rent across, as has been already mentioned.

Neither the trunk of the 8th pair of nerves, nor the great sympathetic, nor those of the tongue, appeared to have suffered injury. The superior laryngeal, and the descending branch of the 9th pair were the chief nerves injured by the accident. These circumstances are mentioned to enable the reader to form his own judgment on the probability of the symptoms which occurred being produced by nervous injury or irritation.

That the disorder and death of this man are not to be attributed to the quantity of blood which he had lost, appears clearly to me, not only from the degree of plenitude and power of the vascular system which remained, but because I had seen many patients in the hospital, who had divided most of the primary branches of the external carotid artery in the attempt at suicide; and who after surviving a few days, perished in consequence of the loss of blood which they had sustained, but with a train of symptoms very different from those which occurred in the present instance.

Some persons may, perhaps, be inclined to attribute inflammations of the brain to nervous injury or irritation. I have taken notice of all the injury discoverable by dissection, and have farther to observe, that we frequently see larger nerves lacerated in wounds, without the production of such symptoms, and the tranquil state of the patient, till the inflammation of the brain came on, opposes such an idea. Upon reflection, I can form no other opinion of the case than that which first struck me, which is, that though the stopping the supply of blood to the brain did not for several hours produce any apparent derangement in the functions of that organ, yet such a state was gradually occasioned by it, and which was attended like the effects of concussion of the brain, with inflammation. It further appeared that when the combined effects resulting from the derangement, and the inflammation were manifested together, the state of the patient much resembled that of a person who had suffered concussion. Miasmata, which impair and disturb the energies of the brain occasion fever and inflammation of that organ, so that there appears to me nothing wonderful in the inflammation which occurred in the present instance. It is right, however, to mention that the carotid artery has been since tied in this city, by Mr. Travers, without such effects as I have described taking place.

Mr. Travers has obligingly communicated to me the following particulars of this case, which I here insert :

“The case to which you refer, I consider to be an example of the disease which Mr. J. Bell has denominated Aneurism by Anastomosis. It was a tumour resembling the nævus, of a livid colour, and compressible, projecting from the orbit, pulsating formidably, and gradually working the eye out of its socket. Pressure aggravated the pulse, and gave insupportable pain. In examining it, I put my thumb on the carotid of the same side, and the pulse instantly ceased. Seeing that it grew fast, I prevailed on the patient, a woman of eight-and-thirty, to allow me to tie the common carotid artery, which I did last May twelvemonth. She suffered

nothing more than I have usually seen follow other operations for aneurism, and was abroad at the end of a month. The tumour ceased to pulsate, but for some time retained a vibratory thrill, which it has since totally lost. It likewise shrunk to about half its former size, and became solid and incompressible, in which state it has since remained. I may also add, that the patient was greatly afflicted with pain in the head prior to the operation, and that it has completely removed that pain."

The different states of the two sides of the body, in the case which I have last related, ought not, I think, to pass without further notice. Although the right side could not be positively said to be paralytic, yet in my opinion it approached to that state.

It has been already observed, that a double construction might be put upon the symptoms: yet as the inflammation of the brain was equal on both sides, we might naturally expect the whole body to suffer equally. Should the state of the right side have been, as appears most probable, an approach to a state of paralysis, it must surely be considered as peculiarly curious. An effusion of blood in the left hemisphere of the brain would affect the opposite side of the body in the same manner that cutting off the supply of blood to the left side appears in this instance to have done. I forbear to speculate on this subject: the fact which I have mentioned seems to deserve notice, and though at present it must stand alone, it may receive future confirmation, and when thus supported, be applied to the elucidation of physiology.

I have thought it right to record this case, not merely because it is curious, but because it affords some useful practical hints as to the conduct to be pursued when a person has divided the large primary branches of the carotid artery in an attempt at suicide. It may be allowable also to mention, in relation to this latter subject, the great advantages which appear to me to arise from the immediate introduction of a small elastic catheter, passed through the right nostril, down the œsophagus, nearly as far as the stomach, (in the manner

practised by Dessault, in the cure of a person wounded by a pistol ball,) when the pharynx or larynx are injured.

A patient in such a state is not under the necessity of frequently swallowing nourishment, which act tears open the wounded parts, and causes inflammation in them, and produces such a secretion of mucus as excites almost constant cough, increasing the disturbance of the wounded parts.

The introduction of a small elastic catheter may be easily accomplished in the first instance, though not without difficulty, after the sensibility of the parts has been increased by inflammation ; and from the benefit I have seen derived from it, I should not hesitate to do it in all cases of extensive wounds of the throat.



SURGICAL OBSERVATIONS.

ON THE ILL CONSEQUENCES SOMETIMES SUCCEEDING TO VENÆSECTION.

THE public is much indebted to Mr. Hunter for a judicious account of the appearance and effects of the inflammation of the vein, which sometimes succeeds to venæsection. The ill consequences which occasionally follow that operation are numerous and dissimilar ; and they have never, I believe, been clearly and collectively stated and explained. The cases recorded of such complaints are dispersed in various periodical publications ; and frequently the nature of the disease appears not to have been understood by the person who relates its history. In proportion as I have seen more varieties of these diseases, my own knowledge of them has become more clear and simple ; and as I believe I can communicate useful information, I have ventured to offer to the public the following observations and opinions. I have been also incited to this task, because the account in his System of Surgery, which Mr. Benj. Bell has given of these complaints appears to me confused and the practice recommended improper. I am hurt to censure the works of any author, but this either must be done, or injurious error must remain uncontradicted.

When from want of attention, or from other causes, the wound inflicted in venæsection does not speedily unite, the motions of the arm occasion attrition of its sides against each other, and inflammation of the wounded, or contiguous parts, is likely to ensue. I shall give a brief account of these different complaints, in the order in which I believe they most frequently happen.

Of Inflammation of the Integuments, and subjacent cellular Substances.

The inflammation and suppuration of the cellular substance in which the vein lies, is the most frequent occurrence. Of this every surgeon must have seen repeated instances ; they may also have remarked, that on the subsidence of this inflammation, the tube of the vein is free from induration ; neither does the state of any of the surrounding parts indicate their previous participation in the disease. The nature of every excited inflammation will vary as the cause which produced it, and the constitution of the patient shall determine ; it will therefore be unnecessary to particularly notice the varieties of its appearance. Sometimes the inflammation will be more indolent, and will produce a circumscribed and slowly suppurating tumour. Sometimes it will be more diffused, partaking more of the nature of erysipelas ; and sometimes its violence and rapid termination will evidently distinguish it to be a phlegmon.

If the lancet with which the patient was bled should have been bad ; if it lacerated rather than cut the parts through which it passed ; if the constitution of the patient be irritable ; and more particularly, if sufficient attention be not paid to procure the union of the divided parts, but the motion of the arm be allowed ; the irritation which the friction of the opposite edges of the wound must occasion, will most probably excite inflammation. The treatment proper to be pursued in this complaint is manifest, and distinguished by no peculiarity ; I shall therefore postpone what I have to say on that subject, until I have noticed the other varieties of these diseases.

Of Inflammation of the Absorbing Vessels.

The next frequent complaint which I have seen is inflammation of the absorbents ; it however sometimes accidentally

happens that one surgeon meets with many cases of a similar nature, so that were he to judge merely from his own observation, he might conclude that disease to be common, when the collected experience of others would determine it to be a rare occurrence. I am inclined to suspect that my observation has been thus partial, since Mr. Hunter has not publicly noticed this complaint. I think I cannot give a better history of the commencement, appearances, and event of this disease, than by relating three cases, of the circumstances of which I took an account. It is right, however, to mention, that I have seen two others, of which I took no minutes; and which I am unwilling to relate only from recollection.

CASE.

A lady was bled in the vena mediana basilica; the wound did not heal, nor was sufficient attention paid to preserve the arm quiet. Eight days afterward I was consulted, in consequence of the patient being alarmed by the appearance of two swellings; one was situated about the middle of the arm over the large vessels, the other on the fore-arm, about the mid space between the elbow and wrist, in the integuments above the flexor muscles. The upper swelling measured rather more in circumference than an egg, the other was of smaller dimensions; they were not very painful; they were moderately firm in their texture, and so exactly resembled those tumours which form round irritated lymphatics, that no doubt could be entertained of their nature. The orifice made by the lancet was not healed; the integuments, for about one-fourth of an inch surrounding it, were in a slight degree inflamed and thickened. No induration of the venous tube could be distinguished, either at this time, or after the subsidence of inflammation.

The account which I obtained from the patient of the attack of this complaint, was, that the wound inflamed, became painful, and discharged matter; that the gentleman by whom

she was bled had dressed it with salve, but did not restrain her from using her arm ; that about five days after the operation she had felt pains shooting from the orifice, in lines up and down her arm, and upon pressing, in the course of this pain, its degree was increased. This account induced me to examine the arm attentively, and I could plainly feel two indurated absorbents, leading to the superior tumour, but could not perceive any extending to the lower one. The wounded part was dressed with mild salve ; a bread and milk poultice was applied to both tumours, and the arm was supported by a sling, and retained without motion or exertion. The integuments surrounding the orifice lost their disposition to inflame, and the wound gradually healed. During five days the tumours underwent no evident alteration ; the poultice was changed to one of bread, water, and a solution of acetate of lead, under which they quickly diminished and dispersed.

CASE.

A man about 35 years of age was admitted into St. Bartholomew's Hospital, under the care of Mr. Pott : he had been bled in the country, about a fortnight before his admission ; since that time he had been extremely ill, and was with difficulty conveyed to London. The state in which he was admitted I shall describe : His whole arm was greatly swollen ; the wound made by the lancet was not united ; the parts immediately surrounding it did not seem to be affected by distinct inflammation, but partook of the general tumefaction. Two large abscesses had formed, one situated near the inner edge of the biceps muscle, about the middle of the arm ; and the other on the inside of the fore-arm. The patient told us that he had been bled, on account of a pain in his side ; that the orifice, instead of healing had festered ; that he had for a time pursued his daily employment, notwithstanding the pain which he suffered ; that this, however, soon became too violent to be endured ; the swelling and

pain extended toward the arm-pit, where the glands became enlarged. Inflammation next attacked the fore-arm, and after suffering extreme pain and fever, these abscesses had formed, and since that time his illness and pain had in some degree abated. Mr. Pott opened both abscesses and directed his whole arm to be covered with a poultice. The patient was kept in bed, and medicines likely to alleviate inflammation were prescribed. In about four weeks the arm was reduced nearly to its natural dimensions. The orifice through which he was bled had united, and the wounds by which abscesses had been opened were nearly healed. The parts surrounding them, however, still remained thickened, and also all the integuments on the inside of the arm. In these thickened integuments, three chord-like substances, evidently absorbents, were to be distinguished; they extended from the punctured part to the superior abscess, and again, above this, two were continued even to the axilla. Two other indurated absorbents also were extended from the punctured part to the inferior abscess. The punctured vein being attentively examined, was found to be a little thickened, both above and below the orifice; it had, however, no connexion with these chord-like substances, which were superficial, and their appearance, course, and every other circumstance, clearly showed them to be indurated absorbents. The hardness of these vessels, and of the integuments, had much diminished, and the patient had regained the strength of his arm, before he was discharged from the hospital.

CASE.

A poor man was bled, in one of the bleeding-shops of this city. His operator dipped some rag in the blood which he had taken, applied it to the orifice, and bound it on the arm with a tape. The patient felt much pain in the wound, even from the time of the operation, and experienced much difficulty in moving his arm. As the rag stuck closely to the

orifice, he was unwilling to remove it ; however, on the third day, the violence of the pain induced him to take it off: he then found the parts surrounding the puncture inflamed and hardened. The patient had also suffered much pain, which extended towards the axilla, and one of the glands there was swollen. He anointed the arm with some ointment, but the pain so increased, that he could scarcely bear it to touch his side. The integuments about the middle of the arm were elevated by a tumour, which was painful when pressed ; the base of it was not circumscribed, but was gradually lost in the surrounding parts. In this situation he requested my advice. I gave him some mild salve to dress the wounded part ; I directed him to keep constantly applied to the integuments, covering the inflamed lymphatics, some cloths wetted with the cold solution of acetate of lead, to keep his arm completely supported by a sling, and to take some gently purgative medicine.

This he did ; the inflammation gradually subsided ; and the wound made by the lancet healed.

It might be suspected, that in the cases which have been related, the lancet which was employed was envenomed ; and that the absorption of virulent matter was the exciting cause of inflammation : the descent of the disease to the inferior absorbents, in the two first cases, opposes that opinion ; and it is further invalidated by the observations which I shall proceed to offer. Since the structure and functions of the absorbing vessels have become so well known, the attention of medical practitioners has been directed to their diseases, and much novel information has been acquired. That which relates to the present subject I shall endeavour briefly to state. Physiology shows to us that the absorbents possess much sensibility. Practical observation strengthens this opinion : the celerity with which these vessels inflame when they have imbibed noxious matter, and the pain which is suffered in consequence, sufficiently prove this circumstance. Their frequent inflammation, in consequence of disturbance of the general constitution, may be however regarded as an addi-

tional argument. A common cold produces a painful tumefaction of the absorbent glands; and in some fevers these parts are particularly obnoxious to disease.

There is another circumstance which deserves attention; when the absorbents become inflamed, they quickly communicate this disease to the cellular substance by which they are surrounded. Most surgeons have remarked these vessels, when indurated, to appear like small chords, perhaps of one eighth of an inch in diameter: this substance is surely not the slender sides of the vessel thus suddenly augmented in bulk, but an induration of the surrounding cellular substance, to which the irritated vessel has communicated inflammation. The formation of a common bubo is another instance of the power which these vessels possess of involving the surrounding parts in their disease; at first one or two glands are found to be inflamed, but they soon become undistinguishable in the general inflammation of the surrounding substance. This inflammation either is dispersed, or it terminates in suppuration; and on the subsidence of the general tumour, the originally diseased glands again become distinguishable.

I now wish to show that their inflammation, in consequence of local injury, is deducible from two causes: one, the absorption of acrid matter; and the other, the effect of irritation of the divided tube. Of the inflammation arising from the absorption of morbid matter, every one is apprized; but that which is the effect of irritation has been less remarked.

When virulent matter is taken up by the absorbents, it is generally conveyed to the next absorbent gland; where, its progress being retarded, its stimulating properties induce inflammation; and frequently no evident disease of the vessel through which it has passed can be distinguished. The absorption of syphilitic and cancerous matter affords frequent proofs of this assertion. There are, indeed, some poisons so acrid, that the vessel which admits them inflames throughout its whole extent; yet still the glands are principally affected. When inflammation of the absorbents happens in

consequence of irritation, that part of the vessel nearest the irritating cause generally suffers most; whilst the glands, being remotely situated, partake less of the inflammation. The inflammation is also of a different kind, and, I think, can be discriminated: when it arises from poison arrested in the part, the gland is first indurated, and a phlegmonoid inflammation follows; but if irritation be the cause of its enlargement, the tumefaction more speedily takes place; the gland is more painful in its early state, but has less tendency to suppurate; the enlargement more resembles that of the lymphatic glands of the neck, which is the consequence of taking cold.

When the inflammation arises from irritation, it will be expected, and I believe it will be found, that the continuity of the vessel will be apparent: but it does not follow that the greatest disease will be immediately adjoining that part which has sustained the injury. The cases which have been related show that inflammatory tumours often form in the middle of the arm and fore-arm, when the wound of the absorbent is at the bend of the elbow. Were it necessary, I could relate several cases where such tumours were formed from injuries done to the fingers, or in consequence of fretting ulcers of the leg. When they arise from the latter cause, it might be supposed that some acrid matter had been imbibed; yet, I think, in that case, we should find the glands the principle seat of the disease. It has been proved that the absorbents frequently inflame far below the part where the vessel has sustained an injury, and where the inflammation could not be occasioned by absorption. These observations I thought it right to insert, to illustrate the cases which have been related; and also to excite more general attention to the diseases of these important vessels.

Of Inflammation of the Vein.

After the account which Mr. Hunter has given of the inflammation of the vein, (in the Medical and Chirurgical

Transactions,) no additional information from me will be expected, nor is it perhaps required. If the wound of the vein does not unite, an inflammation of that vessel will probably follow; which will vary in its degree, in its extent, and in the course which it pursues. One degree of inflammation may occasion only a slight thickening of the venous tube, and an adhesion of its sides; more violent inflammation may be attended with the formation of more limited, or more extensive abscesses; the matter of which may sometimes mix itself with the circulating fluids, and produce dangerous consequences: or it may be circumscribed by the thickening and adhesion of the surrounding parts, and then, like a common abscess, make its way to the surface. When the inflammation of the venous tube is extensive, it is, indeed, very probable that much sympathetic fever will ensue; not merely from the excitement which inflammation usually produces, but also because irritation will be continued along the membranous lining of the vein to the heart. If, however, the effect of the excited inflammation has luckily been to produce adhesion of the sides of the vein, at some little distance from the wounded part, the inflammation will here cease; its further transmission will, by the adhesion, be prevented. The effect of adhesion of membranes, in preventing the extension of inflammation along their surfaces, is frequently apparent, and has been well explained by Mr. Hunter on another occasion. In one case Mr. Hunter applied a compress on the inflamed vein, above the wounded part, and he thought that he succeeded in producing adhesion, for the inflammation extended no farther. In those cases, where the inflammation does not continue equally in both directions, but descends along the course of the vein, it is probable that its extension in the other direction is prevented by adhesion.

I have thus briefly and imperfectly transcribed Mr. Hunter's opinion, that the present Essay might not be altogether deficient in information relative to this subject. I have seen but three cases where an inflammation of the vein succeeded to

venæsection; they, however, confirm the foregoing observations. The vein did not in either case evidently suppurate. In the first, about three inches of the tube inflamed both above and below the orifice; it was accompanied with much tumour, redness, and pain of the covering integuments, and much fever, the pulse was rapid, and the tongue furred. After the inflammation had terminated, and all tumour had subsided, the vein did not swell when compression was made above the diseased part. The second case was of a similar nature, but less in degree. In the third case, the inflammation was not continued in the course of the vein towards the heart, but extended as low as the wrist. I have no doubt but that adhesion of the sides of the vein was the cause which prevented the extension of the disease equally in both directions. The nature of a disease being known, the treatment is commonly evident. The diminution of inflammation in a vein is to be attempted by the same general means as in other parts. As the membranous lining of the vein is continued to the heart, and as inflammation very speedily spreads along such surfaces, unless prevented by adhesion, the application of a compress at some distance from the punctured part, in order to unite the inflamed sides of the vein, appears to be particularly judicious.

I am induced to suppose a case may occur in which the vein may suppurate, and in which a total division of the tube may be proper practice; not merely to obviate the extension of the local disease, but to prevent the collected pus from mixing with the circulating fluids.

Inflammation of the Fascia of the Fore-arm.

As far as my observation has extended, the next frequent ill consequence which succeeds to venæsection performed in the arm, is an inflammation of the subjacent fascia. When this complaint occurs, it perhaps arises not merely from the contiguity of the fascia to the punctured and irritated parts.

but it is probable that it was wounded by the lancet in the operation. I hope that the cases which I shall relate, and those to which I can refer the reader, will convey sufficient information of the symptoms and effects of this disease.

CASE.

A man, aged forty, was admitted into St. Bartholomew's Hospital, under the care of Mr. Pott: he had much pain and difficulty in moving his arm, in consequence of inflammation succeeding to phlebotomy. The wound inflicted in the operation was not healed: the surrounding integuments were not much inflamed; but he could neither extend his fore-arm nor his fingers without great pain. The integuments of the fore-arm were affected with a kind of erysipelas: when slightly touched they were not very painful; but when more forcibly compressed, so as to affect the inferior parts, much pain was suffered. The patient complained of pain, extending towards the axilla, and also towards the acromion, but no tumour of the arm, in either direction, was perceptible. A poultice was applied to the arm, opium was given at night, and aperient medicines were occasionally prescribed. The pain in the arm increased, and it was attended by much fever. After a week had elapsed, a small and superficial collection of matter took place, a little below the internal condyle; this being opened, but little pus was discharged, and scarcely any decrease of tumour or pain followed. About ten days afterward a fluctuation of matter was distinguished below the external condyle; an incision was here also made, which penetrated the fascia of the fore-arm. Much matter immediately gushed from the wound, the swelling greatly subsided, and the future sufferings of the patient were comparatively of little consequence. This opening was, however, inadequate to the complete discharge of the matter, which had probably been originally formed beneath the fascia in the course of the ulna; its pointing at the upper part of the arm depended on the tenuity and com-

parative non-resistance of the fascia at that part. The collected pus descended to the lower part of the detached fascia, a dependent opening for its discharge became necessary, after which the patient recovered, without any circumstance being observed worth relating. The case which I have just related, and that in which two large abscesses had formed, attended with indurated absorbents, occurred nearly at the same time at the hospital; and they both fell under the care of Mr. Pott. In the lectures of that eminent surgeon I had heard dangerous and fatal consequences attributed to the injury of a nerve in venæsection; but I learned no other distinction of cases. These cases first excited my attention to this subject; and, as far as I know, such discrimination as that which I now offer to the public has not been attempted.

I have seen one other case of inflamed fascia, but I neglected to take notes of the symptoms; I therefore can only say, that at the time, they appeared so clearly to characterize it, that I entertain no doubt of its nature. No inflammation of the vein or absorbents appeared, the integuments were not much affected, but the patient complained that his arm felt as if bound or compressed, and that he suffered much pain if he attempted to extend it. The inflammation subsided without the formation of matter; and, after much time had elapsed, the pliability of the arm was gradually regained. I the less regret my deficiency of experience on this subject, as I can refer the reader to the second volume of the Medical Communications: he will there meet with two cases which, I believe, he will acknowledge to be inflammations of the fascia, attended, however, with some peculiarity of symptoms.

The first case is related by Mr. Colby of Dorrington, in Devonshire; the other by Mr. Watson. The inflammation of the fascia, in the latter case, was followed by a permanent contraction of the fore-arm. From this case I think we have acquired useful knowledge: should a similar contraction of the fore-arm from a tense state of the fascia, in future occur,

it seems reasonable to suppose that it may be completely relieved by detaching the fascia from the tendon of the biceps, to which it is naturally connected. This I conclude, was the cause of the perfect restoration of free motion in the case first related by Mr. Watson. On this subject I will not enlarge, but submit the opinion to the judgment of the reader.

The treatment of an inflamed fascia, the consequence of venæsection, has in it no peculiarity. Doubtless, those general means which are reductive of inflammation should be employed. Of local treatment, quietude of the limb, and a state of relaxation of the inflamed part, will tend to lessen disease; but as soon as some abatement of inflammation is procured, the extension of the fore-arm and fingers ought to be attempted, and daily performed, to obviate that contraction which might otherwise ensue.

Of the ill Consequences succeeding to a wounded Nerve.

In order to complete, in some degree, this Essay, I have attempted to discuss the present subject; though, I acknowledge, I have no practical information to communicate. I believe these accidents to be of rare occurrence, since those of my medical friends, to whom I have applied for information, had never seen a case, the symptoms of which they could decisively pronounce to arise merely from an injured nerve. Mr. Pott, in his lectures, used to say, that he had seen two cases in which the patients had suffered distracting pain, which was followed by convulsions, and other symptoms, which could only be ascribed to nervous irritation. He attributed these effects to a partial division of the nerve, and recommended its total division as a probable remedy. Dr. Monro, I am informed, relates similar cases, in which such treatment has proved successful. I rely on the discrimination of these eminent men; yet I feel convinced that the greater number of surgeons have been deficient in distinguishing these diseases. A wounded nerve, acting as a cause, must always produce specific and characteristic symptoms

and effects. I need not insist on the necessity of discrimination in these complaints: those who have described the symptoms resulting from an injured nerve have represented them as at all times imminently hazardous, and frequently fatal. An operation is here demanded; from it we have reason to expect immediate mitigation of the patient's sufferings, and his future perfect restoration. Yet this operation in any other of the complaints' before treated of would be unnecessary, and perhaps detrimental.

I shall arrange what I have to say on this subject in the following manner: First, I shall explain what nerves are subject to injury; secondly, I shall investigate what are the effects likely to be produced by such an accident; and thirdly, I shall inquire what means are most likely to afford relief.

First, the two cutaneous nerves are those which are exposed to injury. I dissected them in several subjects with attention, and found some irregularity in their distribution; most frequently all their branches pass beneath the veins, at the bend of the arm; but sometimes, although the principle rami still go beneath these vessels, many small filaments are detached before them, which it is impossible to avoid wounding in phlebotomy. As I believe many surgeons retain but an indistinct remembrance of these nerves, and as I have never seen them accurately depicted in any anatomical book, I thought I should do an acceptable service by giving an engraving of them. I therefore made two drawings of them; one exhibiting their most simple course; the other, their most complicated distribution. These, I conclude, are the only nerves liable to injury. It may be suspected that the median nerve might occasionally be wounded; but its situation, I think, makes this opinion improbable. If, however, a doubt should be entertained on this subject, an attention to symptoms will soon dispel it; when a nerve is irritated at any part between its origin and termination, a sensation is felt as if some injury were done to the parts which it supplies. If, therefore, the cutaneous nerves were injured, the integu-

ments of the fore-arm would seem to suffer pain: but if the median nerve was wounded, the thumb and two next fingers would be affected with pain.

By referring to the plate it will be seen, that if the patient be bled in the *vena mediana basilica*, the branches of the internal cutaneous nerve are exposed to injury; or, if the *vena mediana cephalica* be opened, the branches of the external cutaneous nerve may be wounded.

Secondly, I wish to inquire what are the ills likely to arise from a wounded nerve.—Whoever reflects on the wonderful minuteness of the nervous fibrils, and considers their perfect distinctness from each other, although connected by a common covering of cellular substance, will scarcely imagine a partial division of a nervous fibril. If I sought to express myself strictly on this subject, I should speak of a partial division of a packet of nerves. But I shall use the commonly adopted language, and call those chords nerves, which are really composed of multitudes of separate nerves. I first beg leave to examine the opinion which has prevailed, of a nerve being partially divided. Admitting that a nerve be partially divided, would it not, like a tendon, or any other substance, unite? I think there can be no doubt but that it would: I am induced to this opinion by considering that nerves of equal size with the cutaneous nerves of the arm are distributed in considerable numbers throughout the body. In the many operations performed, and in the wounds daily occurring, I think it would be strange if a partial division of a nerve should not happen; yet no peculiar symptoms are observed usually to ensue. The pain which some people suffer from bleeding, in my opinion, indicates an injury done to a nerve. If the reader refers to the plate, he will perceive that, in some cases, it is impossible to avoid dividing branches of nerves in phlebotomy, as sometimes they pass before the vein. These branches are so exposed, that I should be surprised if they did not many times suffer a partial division. Surely, however, a half-divided nerve would unite without causing a general derangement of the nervous system. Yet

it is possible that an inflammation of the nerve may accidentally ensue, which would be aggravated if it were kept tense, in consequence of imperfect division. In the cases related by Mr. Pott, and Dr. Monro, I believe that some days elapsed after the infliction of the injury, before any alarming derangement of the nervous system ensued. Inflammation of the surrounding parts also appeared. These observations make it evident to me that the disease consists in inflammation of the injured nerve, in common with the other wounded parts; and this inflammation I can conceive to happen with or without a total division of the nervous chord. I should consider a case of inflamed nerve, as an object of great curiosity: every one, I think, will admit, that it is likely to communicate dreadful irritation to the sensorium: and every one will perceive that a cure will probably arise from intercepting its communication with that important part.

Thirdly, I proceed to inquire what is the most probable method of relieving the effects arising from an inflamed nerve.—The general opinion is, that the nerve is only partially divided, and that a total division would free the patient from a continuance of his sufferings. Mr. Pott supposed that the wounded nerve was situated at one or the other extremity of the wound which had been made in the vein; he therefore proposed to divide it totally, by enlarging a little the original orifice. It is, however, possible that the point of the lancet might injure a nerve lying beneath the vein. This will be easily understood by referring to the plate. Mr. Bell directs an extensive transverse incision to be made through the original wound; but if the injured nerve be situated at the upper extremity of the orifice, it will remain unaffected by this operation. Mr. Bell also advises the incision to be continued to the bone; but this appears to me dangerous and unnecessary.

If the injured nerve be inflamed, I think it doubtful, whether even a total division of it, at the inflamed part, would effectually relieve the general nervous irritation which the

disease has occasioned. To intercept the communication of the inflamed nerve with the sensorium does, however, promise perfect relief. This intention can only be accomplished by making a transverse incision above the orifice in the vein. The incision need not be very extensive, for the injured nerve must lie within the limits of the original orifice, and it need only descend as low as the fascia of the forearm; for all the filaments of the cutaneous nerves lie above this fascia. The vein which had been opened, and some filaments of the cutaneous nerves, are all the parts of consequence which will be divided in this operation. The proximity of the division of the nerve to the vein must be regulated by the supposed extent of the disease. However, as the extent of the inflammation of the nerve is uncertain, I submit it to the consideration of surgeons, whether it may not be advisable, in some cases, to divide either of the cutaneous nerves, still more remotely from the injured nerve.

I find little difficulty in detecting the trunk of these nerves in the dead subject; and I should suppose but little would occur in the living state; for the compression of the tourniquet would prevent any obscurity which hæmorrhage might cause.

Explanation of the Plate.

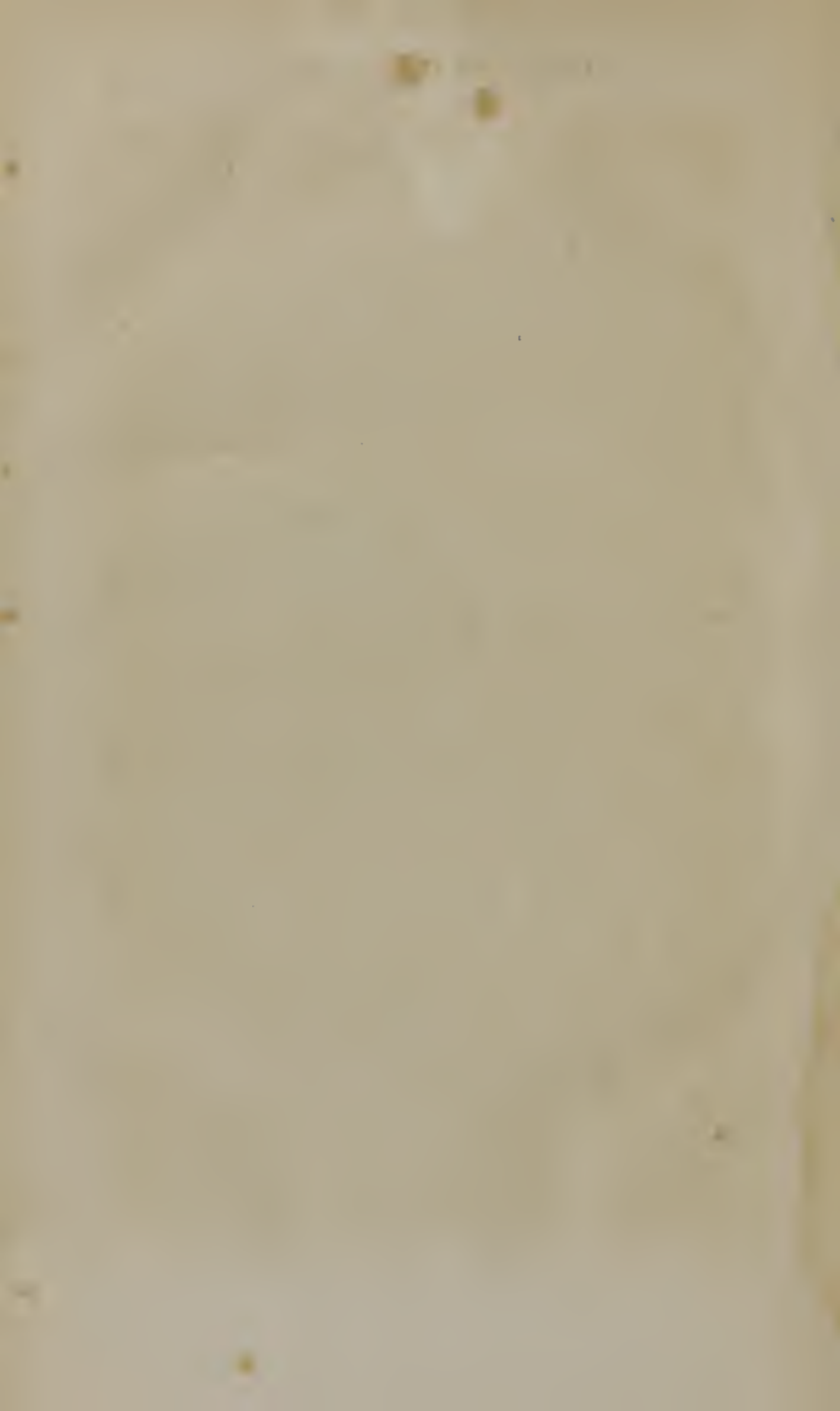
- | | |
|---|---------------------------|
| A | Vena basilica. |
| B | Vena cephalica. |
| C | Vena mediana. |
| D | Vena radialis. |
| E | Vena cubitalis. |
| F | Vena mediana basilica. |
| G | Vena mediana cephalica. |
| H | Nervus cutaneus internus. |
| I | Nervus cutaneus externus. |

*General Observations on the ill Consequences sometimes
succeeding to Venæsection.*

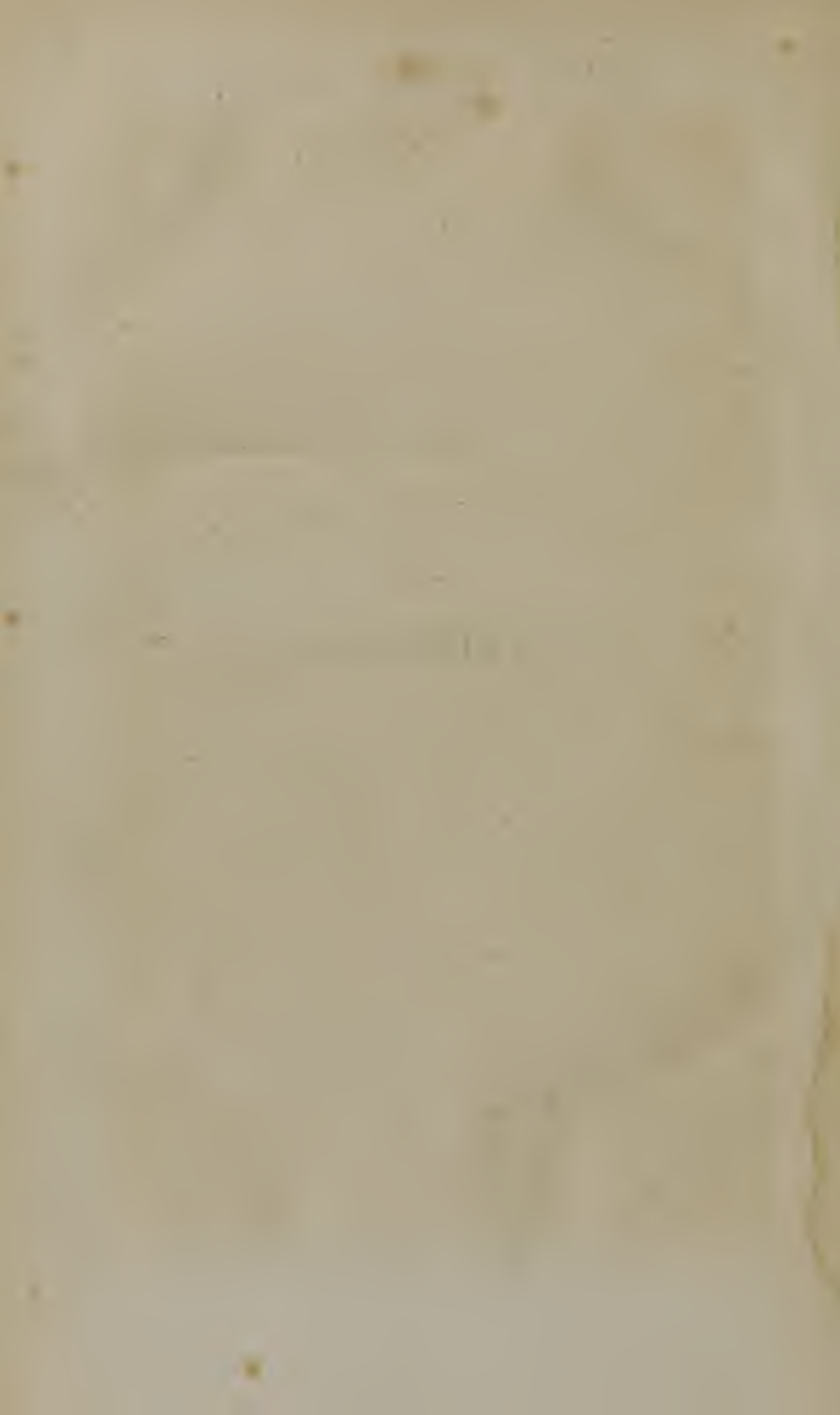
I think it very probable that these diseases would less frequently happen, did not the situation of the veins usually opened contribute to their occurrence. The common offices of life so constantly demand the employment of the arm, that its motion becomes almost inevitable. Unless the orifice made by the lancet has been attentively closed, the effect of this motion will be to separate the edges of the wound from each other, and to prevent their union by the first intention. Some slight degree of inflammation will ensue ; the continuance of motion of the arm causes a friction of the inflamed surfaces against each other, and thus the disease is increased. Under these circumstances, if the constitution of the patient be irritable, the inflammation will extend itself, although it may still be confined to the cellular substance and integuments ; or, perhaps, it may be transmitted to that part which has sustained most injury in the operation. The vein, the absorbents, the fascia, or the nerve may, in that case, suffer peculiar disorder. Although the injury done by a bad lancet may contribute to the production of disease, yet I think it probable that a patient, improperly bled, would sustain no injury if the treatment of the wound was judicious ; whilst another, on whom the operation had been dexterously and well performed, would be liable to these ill consequences, if the proper attention to unite the wound was neglected.

In the account given of these diseases, they have been represented as they occurred, separately ; doubtless, in some cases, they may be combined.

The principal curative indications appear to be, to mitigate the inflammation about the orifice, and to preserve the arm supported in a motionless state. I need not enlarge this account by describing the modes of appeasing inflammation and irritation, as they are well known to every surgeon.



ON EMPHYSEMA.



ON EMPHYSEMA.

MUCH praise is, in my opinion, due to Mr. John Bell, for the clear and spirited description which he has given of the state of the lungs in one kind of emphysema. The following case is related to corroborate his remarks, and also to lead to others which I am desirous of offering to the public on the subject of emphysema in general.

CASE.

A poor woman, about forty years of age, was run over by a mail-coach, one of the wheels of which passed lengthwise over her back, and fractured several of her ribs on the right side. When brought to the hospital she breathed with much difficulty, and an emphysema of the integuments had taken place. An opening was made through the skin to let out the air; and the emphysema did not afterward spread. The patient was bled largely; but the difficulty of breathing had increased to the third day, at which time I first saw her, in company with Mr. Harvey, under whose care she was. She had passed the preceding night without the least sleep, and breathed at this time with extreme difficulty; indeed it seemed as if she could not long continue the labour of such imperfect and distressful respiration. It was supposed that one side of the thorax was filled with air; and as it was suspected that the opposite lung might be oppressed by this cause, it was agreed to extract the air from the right side of the chest. With this view, Mr. Harvey made an opening into the thorax, in the following manner: He first made an incision about two inches in length through the integuments,

near the middle of the seventh rib, and opposite to its lower edge. He then drew the skin upwards, so as to expose the intercostal muscles which connect the upper edge of this rib to the one above it. These he cautiously divided, as he next did the pleura. At the time this was effected, I believe the patient was in the act of expiration; for a blast of air evidently issued from the thorax; and afterward, whilst the integuments were kept retracted, and the aperture in the pleura consequently uncovered, the external air continued to rush in during the enlargement of the thorax, and to be forced out again during its contraction. But when the divided skin was allowed to descend to its natural situation, and thus the opening of the pleura was covered, no farther passage of air took place, and all that could then be perceived was a depression of the integuments opposite to the aperture in the thorax, occasioned by the pressure of the atmosphere during the enlargement of that cavity. I had got ready a large injecting syringe, and, introducing the pipe into the cavity of the chest, I drew up the piston, and thus exhausted the air, till I found I was stopped from proceeding by the lung, which had risen up and applied itself to the mouth of the syringe. The skin was then immediately brought down over the aperture in the thorax, and served, like a valve, to prevent the further ingress of air into that cavity. About ten ounces' measure of air might probably have been extracted by the syringe. As this quantity of air could have occupied but a small space when compared with the size of the thorax, it was probable that the back part of that cavity was filled with fluids.—Nothing further, however, was done at this time; and shortly after the poor woman fell asleep, and breathed with comparative ease for nearly six hours. But the difficulty of breathing again increased during the night, and at noon on the following day was nearly as great as ever. Mr. Harvey and I agreed, however, that it would not be wrong to inspect the thorax, to see if the lung had collapsed, or if we could by any means afford relief to the patient. Upon separating the adhesion which had formed between the skin and subjacent

parts, and introducing a finger through the aperture in the pleura, we found the lung adhering to the inside of that membrane ; but, upon slightly varying the patient's posture, some turbid bloody serum flowed from beneath the lung. When we had discharged as much of this fluid as we conveniently could, the external wound was closed ; but the patient continued to breathe with increasing difficulty till about midnight, when she died.

Dissection.

On examining the body, no air was discovered in the cavity of the chest. The right lung was partially inflated, and the anterior part of it closely adhering to the pleura costalis, as far as the place where the opening had been made. About three pints of bloody fluid lay in the hollow of the ribs posteriorly, and about half filled the cavity of the chest on that side ; the surface of it being nearly on a level with the opening which had been made to exhaust the air. Upon the surface of this fluid, the half-inflated lung seemed to float.—I looked for the place where the lung had been wounded by the injury ; but cannot say that I could perceive it. It was, however, certainly healed ; for the lung bore inflation without letting the air escape from it. The pleura was covered with coagulated lymph. The cells of the lung contained a quantity of fluid, and the whole substance of it was of a livid colour.—The cells of the lung of the opposite side of the chest also contained more than their ordinary quantity of fluid ; its vessels were turgid, and it was hard and thickened in several places ; which was probably owing to former disease. There was likewise more than a usual quantity of turbid serum in the left cavity of the thorax.

It seems to me highly probable that there are two states of the lungs in emphysema, one of which, indeed, can rarely be proved by examination, since the patients in general do well. I have, however, met with instances in which patients affected with emphysema from a wounded lung died of other

injury, and thus been able to ascertain that the lung had not collapsed. I once also met with a proof of this fact in a patient who survived, and I will relate the circumstances of the case.

CASE.

Mr. Crowther requested me to see a poor man who was brought into a work-house with fractured ribs, accompanied with a great degree of emphysema. The integuments covering the upper part of the left side of the thorax and neck were elevated to a great degree by air that seemed confined in one cavity, and not diffused in the interstices of the cellular substance. The integuments of the face were also considerably inflated. The pulse was very frequent and small, and respiration quick and difficult. The extremities were cold. All these circumstances had taken place so rapidly, and were apparently increasing with so much celerity, that I thought it right, for reasons which will be mentioned afterward, to make an opening into the cavity of the thorax, which I accordingly did, between the 7th and 8th ribs, where the digitations of the serratus anticus muscle meet those of the external oblique. The external wound was made in the manner described in the foregoing case. The lung was in contact with the sides of the chest, nor did it recede when exposed. Should such an occurrence ever take place, a surgeon has the means of preventing its happening to any injurious degree, by instantly closing the wound. We next made a puncture through the distended integuments on the front of the chest, about opposite to the collar-bone. A blast of air escaped, and they subsided to their original level. The diffused air was expressed, in some degree, from the integuments of the face and neck through the same wound. A bandage was now applied round the walls of the chest, so as to prevent their motion, and the escape of air into the cellular substance, and the patient was afterward bled. No more emphysema occurred, and the patient did as well

as in a case where the ribs are merely broken, and the lungs uninjured. I cannot satisfactorily account for the great quickness and difficulty of respiration that took place in this case, except by attributing it to the agitation of the patient's mind, alarmed by the inflation of his neck and face.

I have seen so many cases of emphysema, attended with very little difficulty of breathing, or other inconvenience, indeed, proceeding in a manner so like cases of fractured ribs unaccompanied with wounds of the lungs, that I cannot suppose patients were in these cases reduced to the necessity of breathing with one lung only. These patients, indeed, were all treated in the manner recommended and practised by Sir William Blizard. Observing the great pain and irritation which the constant motion of the fractured ribs occasioned, he was induced to disregard the emphysema, and to confine the motion of the ribs by a tight bandage, in the same manner as when the lungs are uninjured : afterward the patients were largely bled, and other evacuations were freely made. This practice he has since continued with general success. The pressure of the bandage, in general, prevents the air from escaping out of the wounded lung, and pervading the cellular substance. It will, perhaps, appear probable to many surgeons, that, for this very reason, the air will be likely to insinuate itself between the two pleuræ, and thus occasion a collapse of the lung. I do not, however see any good reason for such a supposition. The two pleuræ remain in their natural state of contact ; and there is no space for the air to pass between them. So frequently also are there adhesions between the surface of the lung and the sides of the thorax, that I think, in some of the cases of emphysema which I have seen, this circumstance must have occurred, and that if the lungs had receded from the sides of the thorax, the symptoms would have indicated the laceration or stretching of these adhesions.

An idea has generally prevailed among surgeons, that if the pleura costalis were divided in the living subject, the lung would immediately collapse, as it is usually found to do in the dead one. But M. Bremond* has shown by experiments, that not only when an opening is made into the cavity of the thorax, but even when some of the ribs are removed, the lungs still occupy their natural situation, and are even thrust up into the opening during expiration. Mr. Norris has also lately shown by experiments undertaken for this purpose, as well as by observations on the effects of accidents, that frequently the lungs do not collapse when the cavity of the chest is exposed in the living animal;† and I have also had occasion to observe, on dividing the pleura costalis in a case of supposed hydrothorax (in which, however, no water was found,) that the exposed lung did not collapse; a circumstance which, I think, ought to encourage us to a more frequent performance of such an operation. In other experiments, however, the lungs have been known to collapse; and the circumstances on which either of these effects depends are not perhaps well understood.

For these reasons, I believe that in most cases of emphysema succeeding to broken ribs, pressure by bandage not only hinders the air from diffusing itself through the cellular substance, but serves to prevent it from escaping out of the wounded lung, and of course facilitates the healing of the wound, which would be prevented by the constant transmission of air. Its early application, therefore, will often prevent a very troublesome symptom, whilst, at the same time, by keeping the fractured bones from motion, it greatly lessens the sufferings of the patient.

In some cases where the lungs are wounded by the ribs, the air does undoubtedly get into the cavity of the thorax, as happened in the case of the poor woman already mentioned, and as I have seen in other instances. When the air passes from the wounded lung into the cavity of the chest, and the

* *Memoirs de l'Acad. des Sciences*, 1739.

† *Memoirs of the Medical Society of London*, vol. iv. p. 440.

lung becomes in consequence collapsed ; still the symptoms and progress of the complaint will differ from the effect of circumstances which have not been much attended to. When the wound in the sides of the thorax allows of the expulsion of air from that cavity during expiration, and does not admit air during inspiration, it is not to be supposed that the wound of the lung can heal ; for the cavity of the thorax must, under these circumstances, be filled from the wounded lung every time that it is enlarged during inspiration.

But this state of circumstances, which is so particularly injurious, and which usually takes place when the lung has collapsed in the manner described, it is the business of the surgeon to remedy ; and it may be accomplished in two ways : First, by preventing the escape of the air from the cavity of the chest, in which case the necessity of its being filled from the wounded lung will, in a great measure, be done away. And as I know surgeons have apprehended, that if an outlet was not given to air from the cavity of the chest, the opposite lung might become oppressed, I beg them to reflect a little on the state of respiration under these circumstances.

To examine this subject, let us suppose the thorax expanded, and one of its cavities filled with air, at which time the patient attempts to make an expiration ; what will be the effect ? The air cannot return through the wound in the lungs ; and we have supposed that it cannot escape through that in the pleura costalis. The muscles of respiration are unable then to produce any considerable change in the dimensions of the cavity without an exertion productive of pain, which it is not probable that they will make ; the inactive diaphragm will not be thrust up into the hypochondrium as in natural expiration, and the ribs will remain nearly stationary ; but in proportion to the degree of the expiratory effort that is made, the air may be condensed, and the mediastinum thrust to the opposite side of the chest. But no injury will arise from this pressure, neither can it happen in any great degree ; for both sides of the chest being diminished at the same time. a

slight compression of the opposite lung cannot be detrimental, since it helps to express the air from it,—the very effect which is now required; and as that lung is pressed inwards by the sides of the thorax, it will counteract any great pressure made on the mediastinum. Upon inspiration taking place, the condensed air will expand and fill the enlarged cavity, and the mediastinum will regain its natural situation; so that the function of the sound lung is scarcely, if at all, impeded by the compression which takes place on the opposite side of the chest.

In whatever state the lungs happen to be when they are wounded, a bandage, if it can be borne, seems therefore to me extremely useful. By means of it, the pain and irritation, which the motion of the fractured ribs must otherwise occasion, are, in a great measure, or entirely, prevented. In that state of the lungs which I have first described, the pressure of a bandage prevents emphysema, and does no harm; in the other, it not only prevents emphysema, but does good, by keeping the collapsed lung at rest, and thereby free from the necessity of constantly transmitting air. Patients, however, will not always be able to wear a bandage when one lung is collapsed (particularly if any previous disease has existed in the other,) as it equally confines the motion of the ribs on both sides, and as every possible enlargement of the chest becomes necessary for the due admission of air into the lung which still executes its functions. Under these circumstances, if the emphysema continues (and its continuance must always denote that the wound in the lung is not closed,) I should esteem it the best practice to make a small opening into the chest, so that the external air might have free communication with that cavity; and then the injured lung must remain motionless till its wound is healed, and the mediastinum will, in every state of the thorax, preserve its natural situation.

As almost all the circulating blood must, in such cases, be transmitted through the vessels of one lung, if the quantity of that fluid be not greatly diminished, the pulmonary vessels

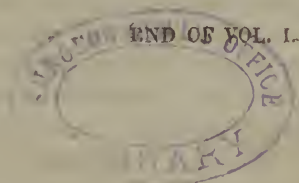
will become turgid ; a larger effusion of fluids will therefore take place into the air-cells and cavity of the chest, and thus the function of the acting lung will be materially impaired. This reasoning illustrates what experience has already determined, viz. that the preservation of life in these cases depends on the most copious blood-letting.

The case which I have related clearly shows that the collapsed state of the lung affords an opportunity for the wound of its surface to heal ; and when this desirable event is accomplished, the air which is at that time in the cavity of the thorax, will be speedily absorbed, and the lung will again acquire its former size and situation. But should the function of it be more immediately necessary, from a diseased state of that on the opposite side, or from other circumstances, it may be more quickly restored by exhausting the air, in the manner described. If the cavity of the chest contain a quantity of fluids, and it is thought right to extract them, it cannot well be done by varying the posture of the patient so as to let them run out of the opening that has been made : the difficulty with which respiration is performed will render such an attempt almost insupportable to the patient. It would therefore be better to introduce a hollow bougie, or some such instrument, into the posterior part of the thorax, there connect it to the syringe, and thus extract the contained fluids. I need scarcely add, that the same method may be employed with advantage for the extraction of water from the cavity of the chest in hydrothorax.

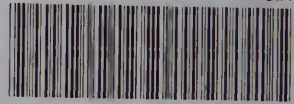
The great advantage of retaining the lung in a collapsed state is, if possible, more strikingly shown when those bodies have suffered a greater degree of injury than can occur to them from the fracture of a rib. I have seen cases in which bullets have passed through the lungs, near the root of those bodies, and where many of the large vessels were consequently torn, in which the blood has been poured into the cavity of the chest, has condensed the lung by its pressure, and thus suppressed the hæmorrhage. The injured vessels might, under these circumstances, unite ; and the blood being let

out of the thorax, the lung might gradually be restored to its former function. Yet in the cases which I was a witness to, the patients died of inflammation and fever; but the particular nature of the circumstances was unknown during the life of the patient; and of course the conduct appropriated to them was not pursued. The fluid contained in the cavity of the thorax had in these cases undergone a degree of putrefaction previous to the patient's death; which state required its discharge.

But should this be attempted in other cases, it becomes very essential to keep the thorax filled with air, lest the lungs should become prematurely inflated, the newly healed part lacerated, the hæmorrhage renewed, or inflammation induced; and the surgeon would be able, I believe, without much contrivance, to regulate the inflation of the lungs as circumstances seemed to indicate. Surgeons used formerly to keep canulæ in the thorax in these cases, with a design to give an outlet to fluids; but such means might have been beneficial, by preserving the lungs collapsed; and they might have been continued from being found serviceable, though the manner in which they became so was unknown.



NATIONAL LIBRARY OF MEDICINE



NLM 04139182 6